LIZARS'S ANATOMICAL PLATES

F. 264

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The Plates may be consulted, either in single Parts, as they were published, by reference to the Contents prefixed to the Octavo Letter-press Description of each Part; or, when bound in One Volume, an additional Folio sheet of Contents, the full size of the Plates, is given, with reference to their number in each Part, and also of their consecutive Number from Plate 1. to Plate 101.

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⁂ *To face the Title.*

F.244

A
SYSTEM
OF
ANATOMICAL PLATES
# of the
HUMAN BODY,

Accompanied with Descriptions, and
PHYSIOLOGICAL, PATHOLOGICAL, AND SURGICAL OBSERVATIONS, BY

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Dedicated by Permiſsion to
THE KING.

Designed & Engraved by W.H.Lizars Edinburgh

EDINBURGH;

PUBLISHED BY W.H.LIZARS, 3, S^T. JAMES SQUARE; DANIEL LIZARS, 5, S^T. DAVID STREET;

S.HIGHLEY 174. FLEET STREET AND WEBB STREET S^T. THOMAS'S HOSPITAL, LONDON;

AND W. CURRY JUN^R. & C^O. 9. UPPER SACKVILLE STREET DUBLIN.

TO THE KING.

SIRE,

The voice of antiquity, the nature of disease, the casualties of ordinary life, and the hazards of war, all conspire, with the dictates of sound philosophy, in enforcing the claims of Anatomy and Physiology, as the basis of a successful system of Medicine and Surgery. It is natural, and an act of duty in me, therefore, to desire, that labours intended, and, I trust, calculated, to promote the interests of a practical science, in which, not only Your Majesty's Subjects, but likewise, all the nations of the earth, are essentially and deeply concerned, should receive a due portion of countenance and favour from a Monarch, equally distinguished, by anxiety for the welfare of his People, and estimable, even above the dignity of his exalted station, for the judicious and effectual encouragement of every undertaking and institution, the benefits of which, like the influences of the sun, are common to the human race.

To Your Majesty alone, could admiration, sense of propriety, feelings of loyalty, and generous ambition, unite, in prompting me to look for an adequate Patron; because, from Your Majesty alone, could I hope to obtain, at once, the benevolent pardon of all unintended imperfections, the praise which ennobles success, and the sanction which extends utility.

Sire, You will graciously permit me to assign a very imperative reason for presuming to solicit the notice of Your Majesty. I am emboldened, by the highest of all obligations, to avail myself of the appearance of this work, to suggest the necessity for speedily adopting some measures, in behalf of the science, to the advancement of which it is conscientiously devoted. It is impossible for me, or for any other teacher, in this department of professional education, not to regret, most painfully, that, through the increase of certain prejudices, as illiberal as they are alien to true philanthropy, obstacles are daily arising, in

Your Majesty's United Kingdoms, to the prosecution of Anatomy. It is equally impossible not to believe, what ample observations demonstrate, that the magnitude, to which they have already attained, is, in its infallible and invincible operation, signally and seriously injurious to Your Majesty's Subjects, both in the public service, and in all the ranks of private society. Many more of these, than unsuspecting benevolence could have imagined, are doomed, it were easy to prove, to a premature grave, by the consequent deficiency in this requisite science, on the part of those to whom the care of life and health is committed: And, I will state, most respectfully, to Your Majesty, in evidence of this alarming truth, well-known and universally deplored, as it is, in the Schools of Medical Learning, one circumstance, of political importance enough, independently of humane considerations, to justify the freedom which I thus assume.

In France, in Germany, and in Denmark, the prosecution of Anatomy is protected by their respective Governments; and, in them, every facility is afforded for its complete and satisfactory study. Hence, in great degree, it is, that, of late years, such of the medical youth, among Your Majesty's Subjects, as are enabled by their circumstances, proceed to these foreign Kingdoms, in search of information of the most valuable kind,—being compelled thereto by the dread of entering on the practice of their profession, while ignorant of some of its fundamental principles, and of having, through the unavoidable fault of a merely British education, to collect by repeated failures in their treatment of the living, that knowledge which they might have early, and safely, and ably, acquired, from intimacy with the dead.

Sire, I cannot doubt, that, Your Majesty, impressed with a sense of the awful responsibility and agonizing duties of medical men, will be most graciously pleased to recommend the subject of their effective and thorough instruction, in this claimant particular, to the serious attention of Your Majesty's wise and liberal Ministers, with a view to the accomplishment of what science points out as desirable, and what the calamities of mankind decide to be necessary.

That Your Majesty may long live to witness, with delight, the beneficial results of such cogently called-for interference, and to receive, on this account, as for every other act of a patriotic, an enlightened, and a prosperous government, the heartfelt thanks and blessings of a grateful because a fortunate people, is the fervent prayer of,

SIRE,

Your Majesty's

Most devoted, very humble, and faithful

Subject and Servant,

JOHN LIZARS.

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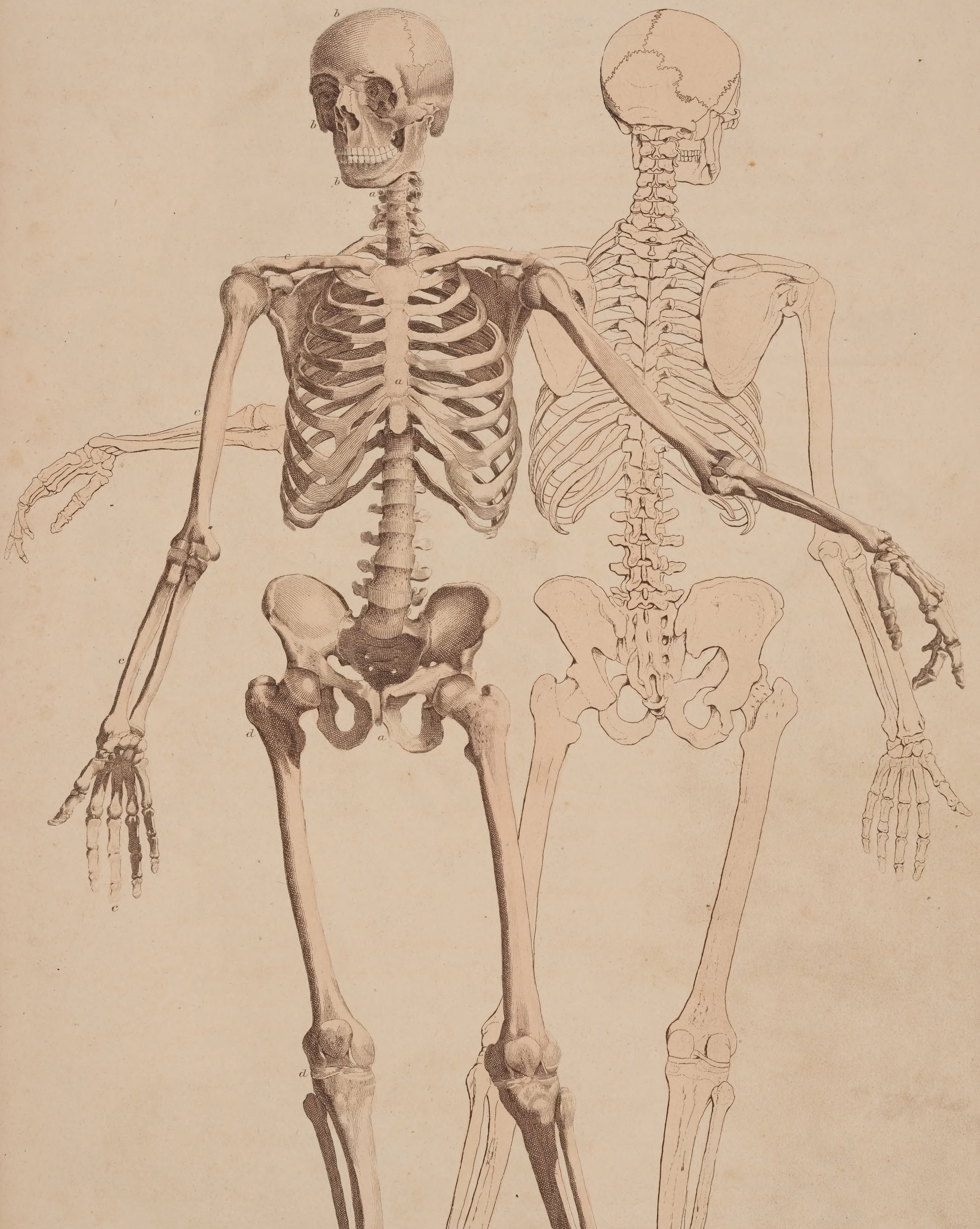
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PLATE II.

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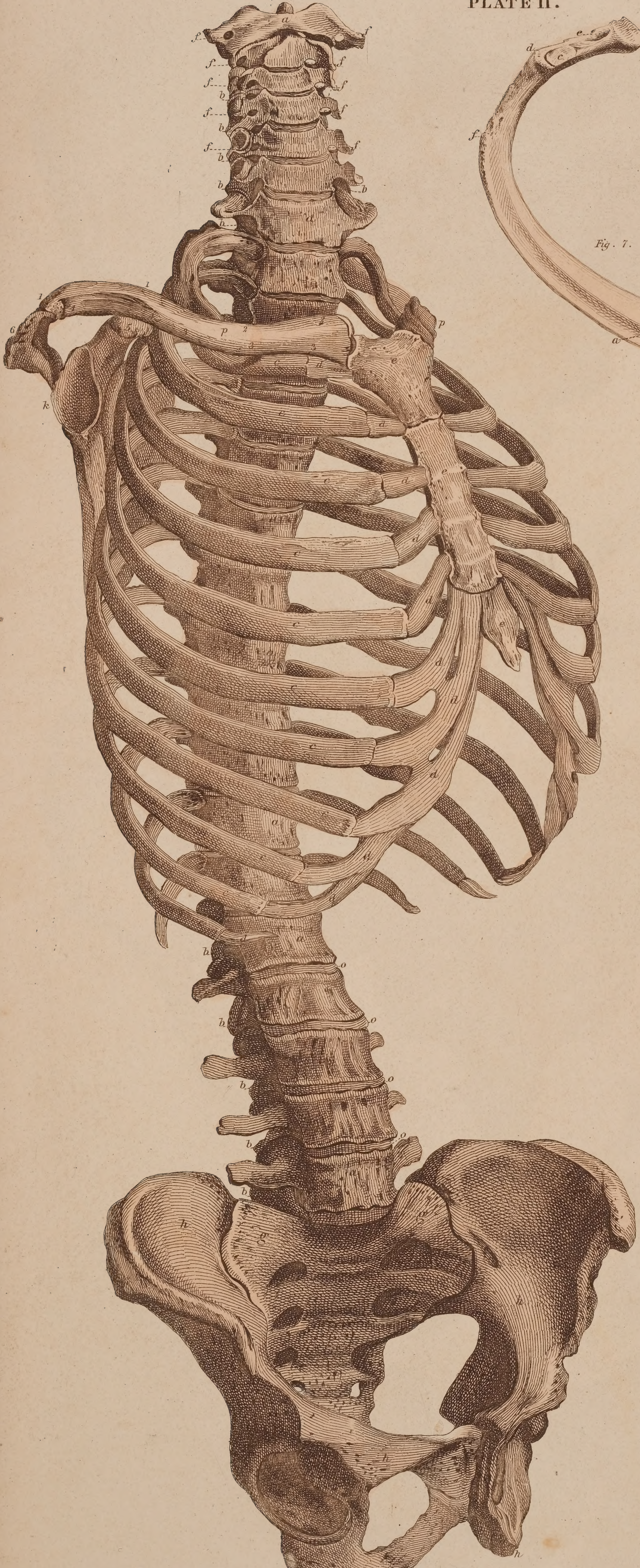

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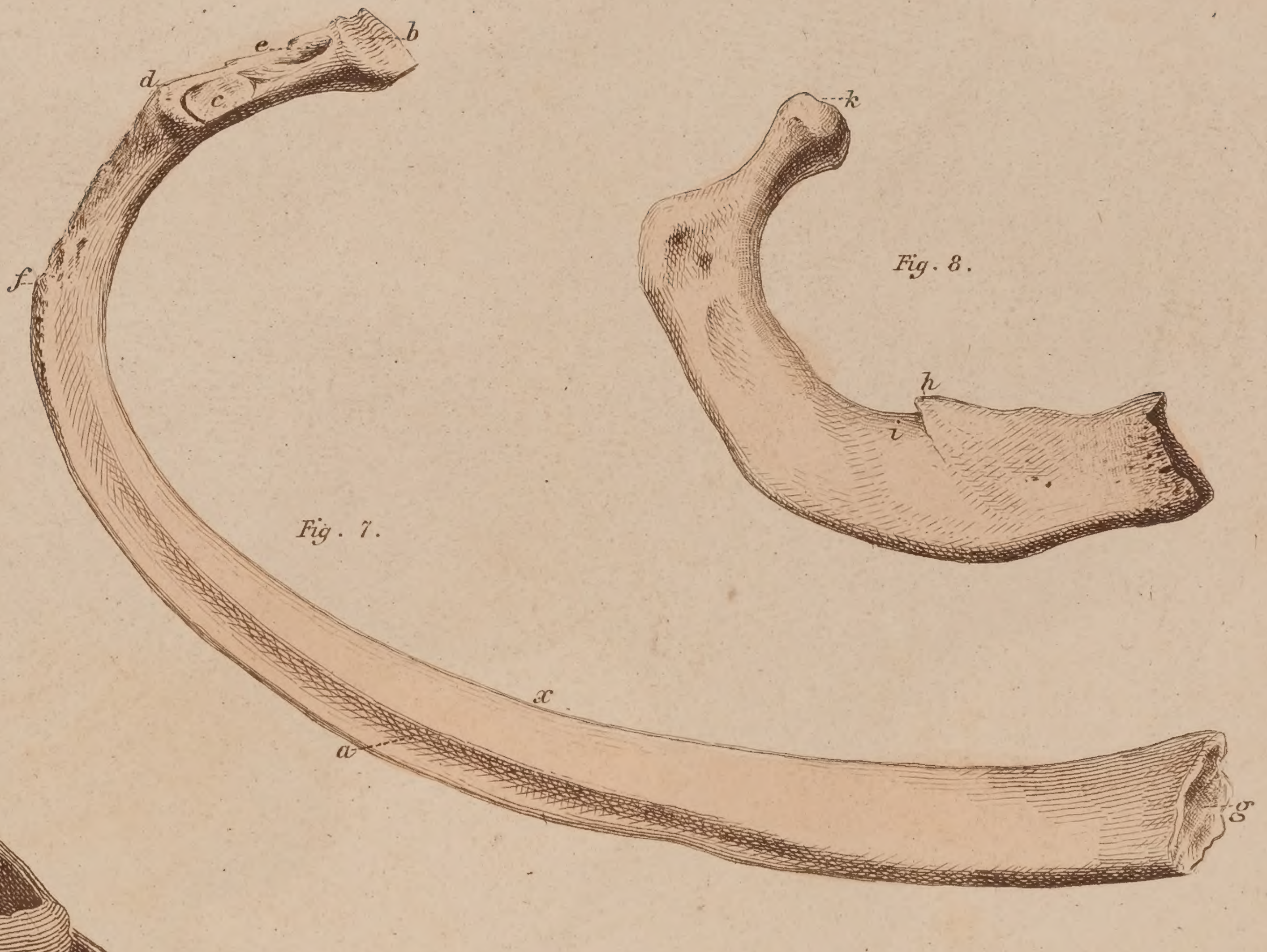

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Fig. 8.

Fig. 5.

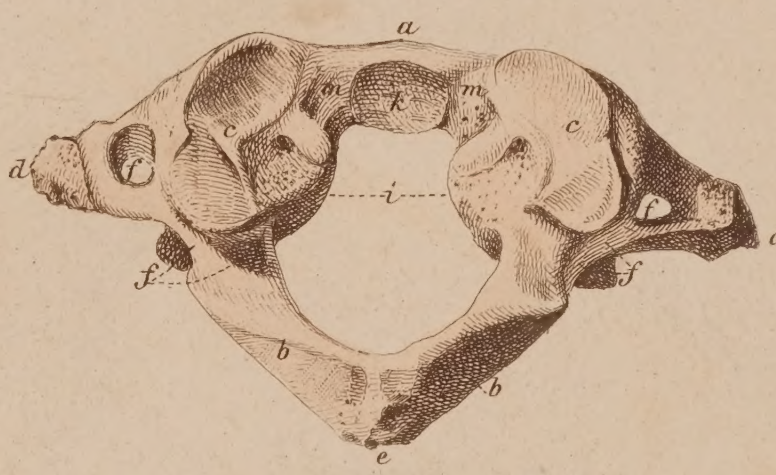

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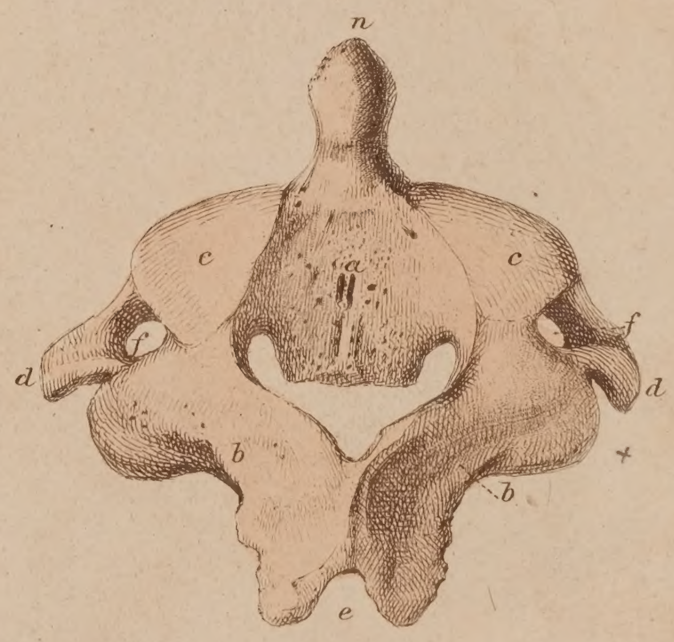
Fig. 6.



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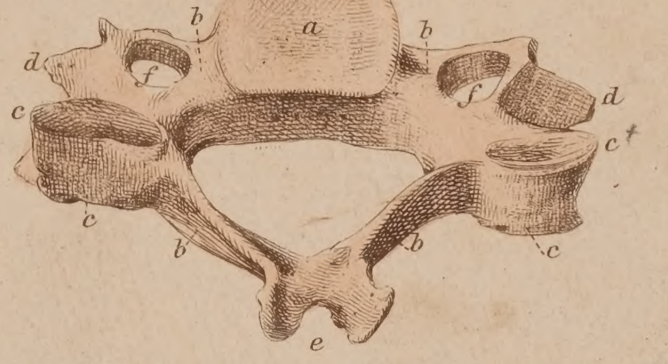

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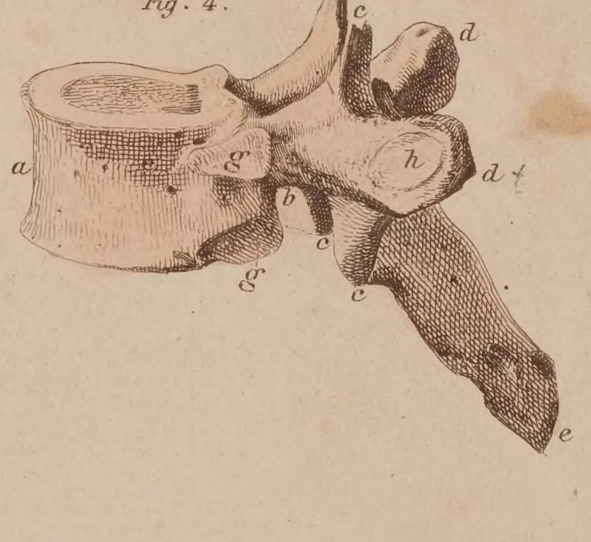

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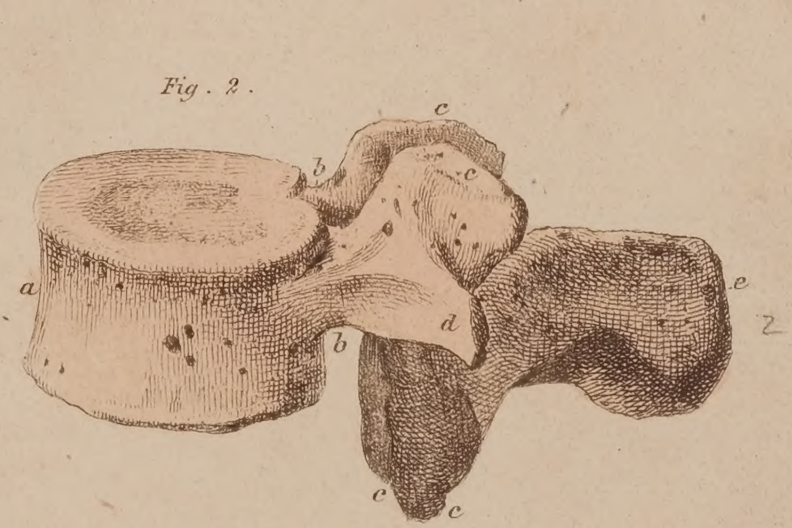

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PLATE III.

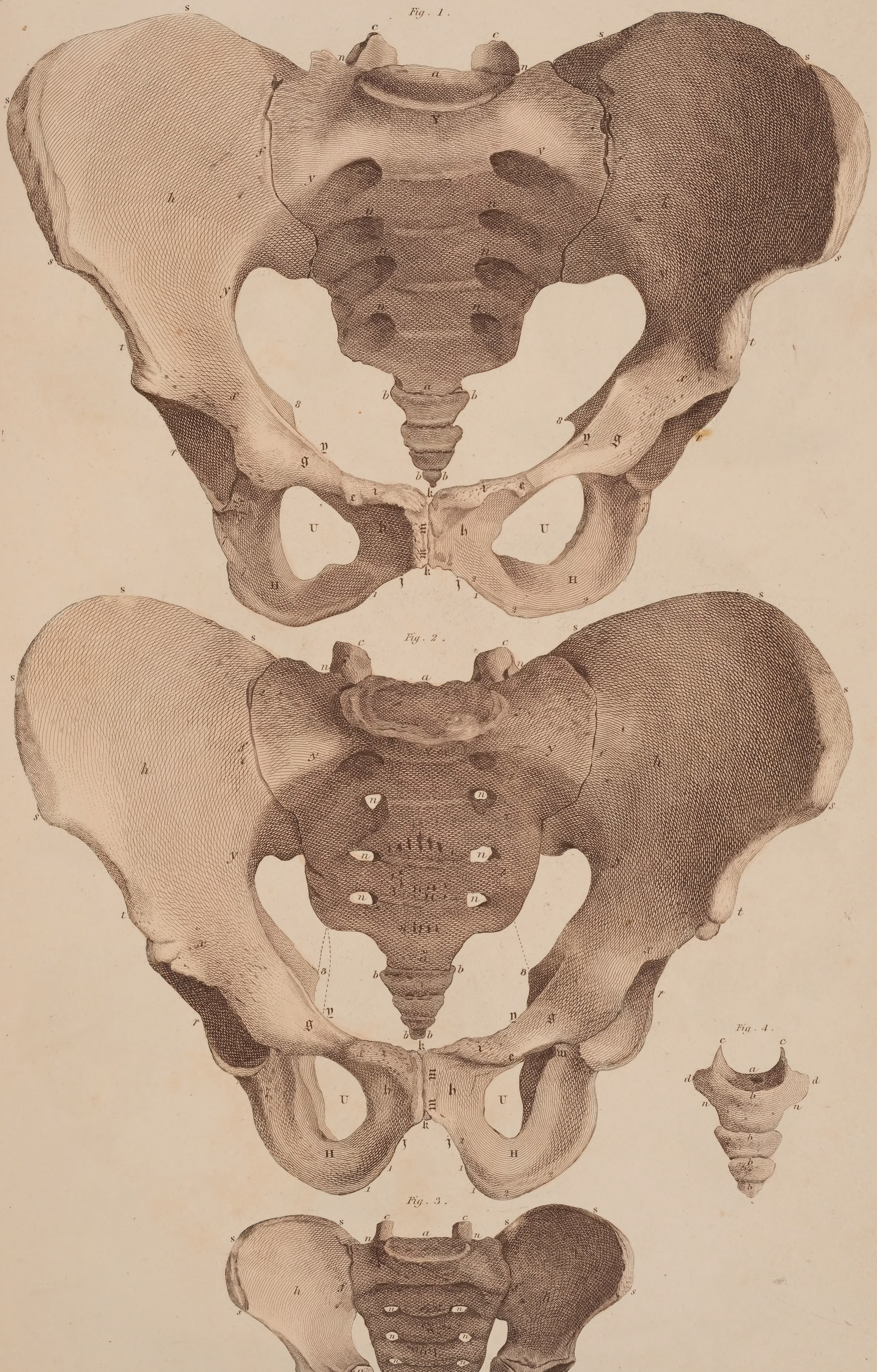

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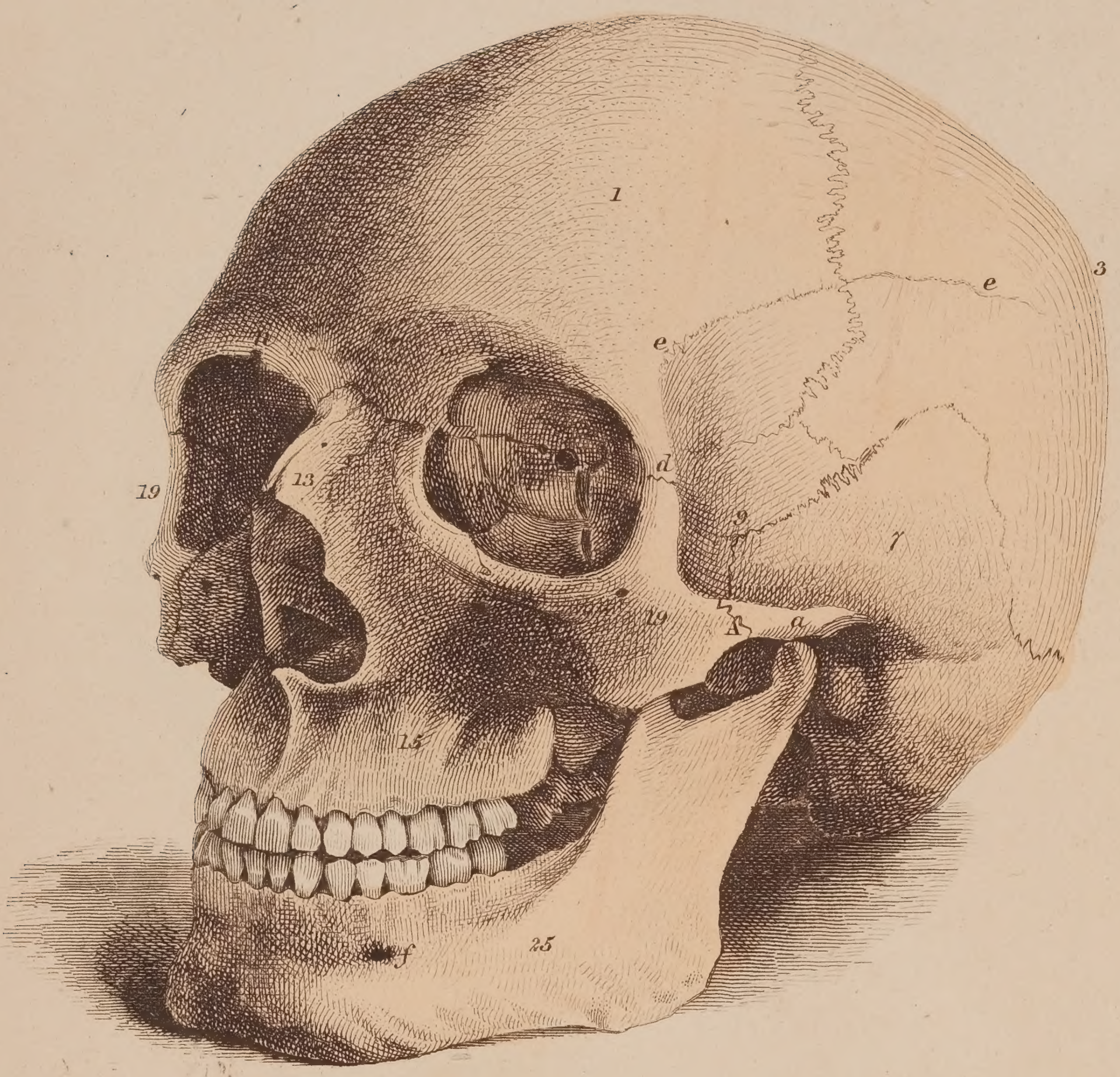
PLATE IV.

Fig. 1.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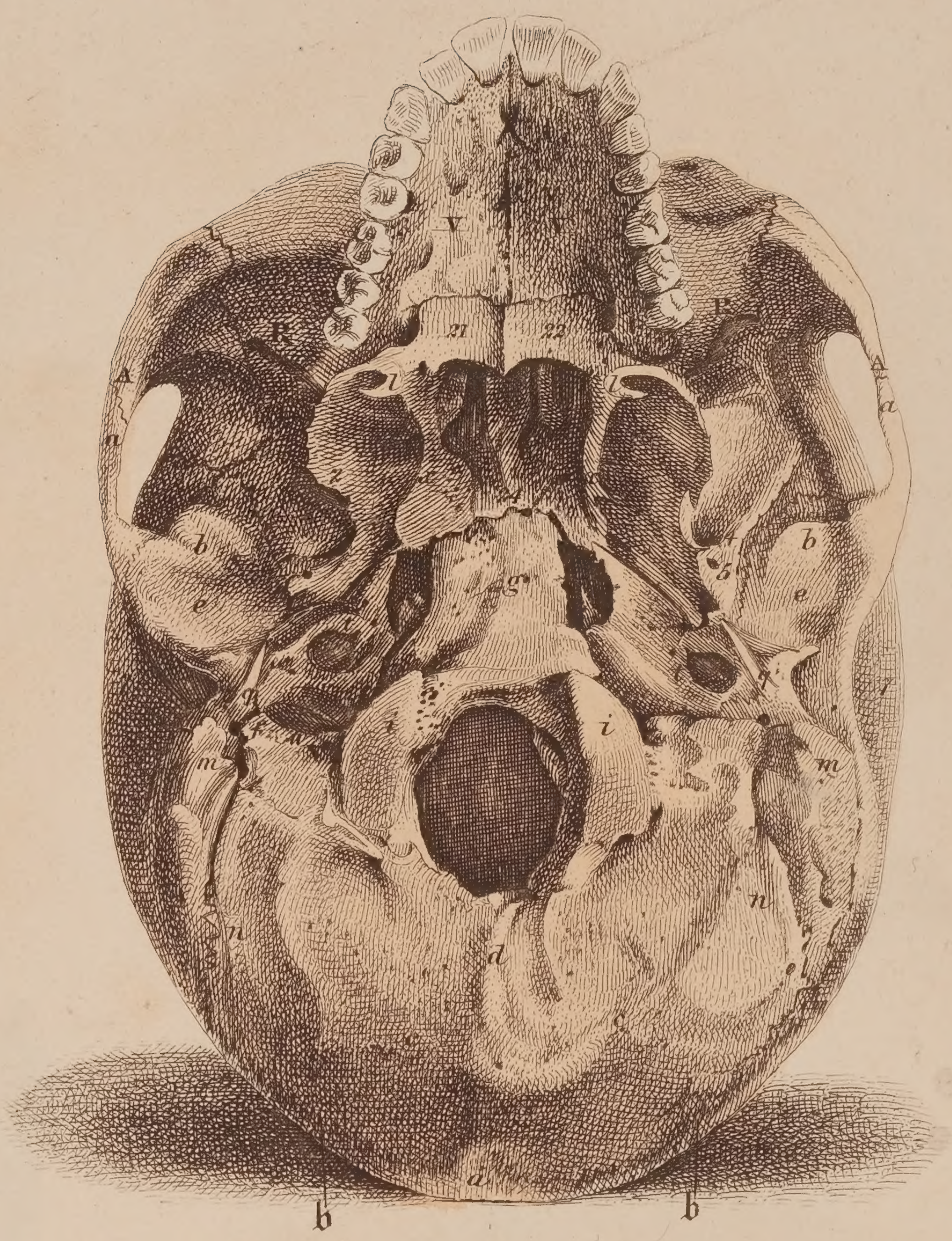
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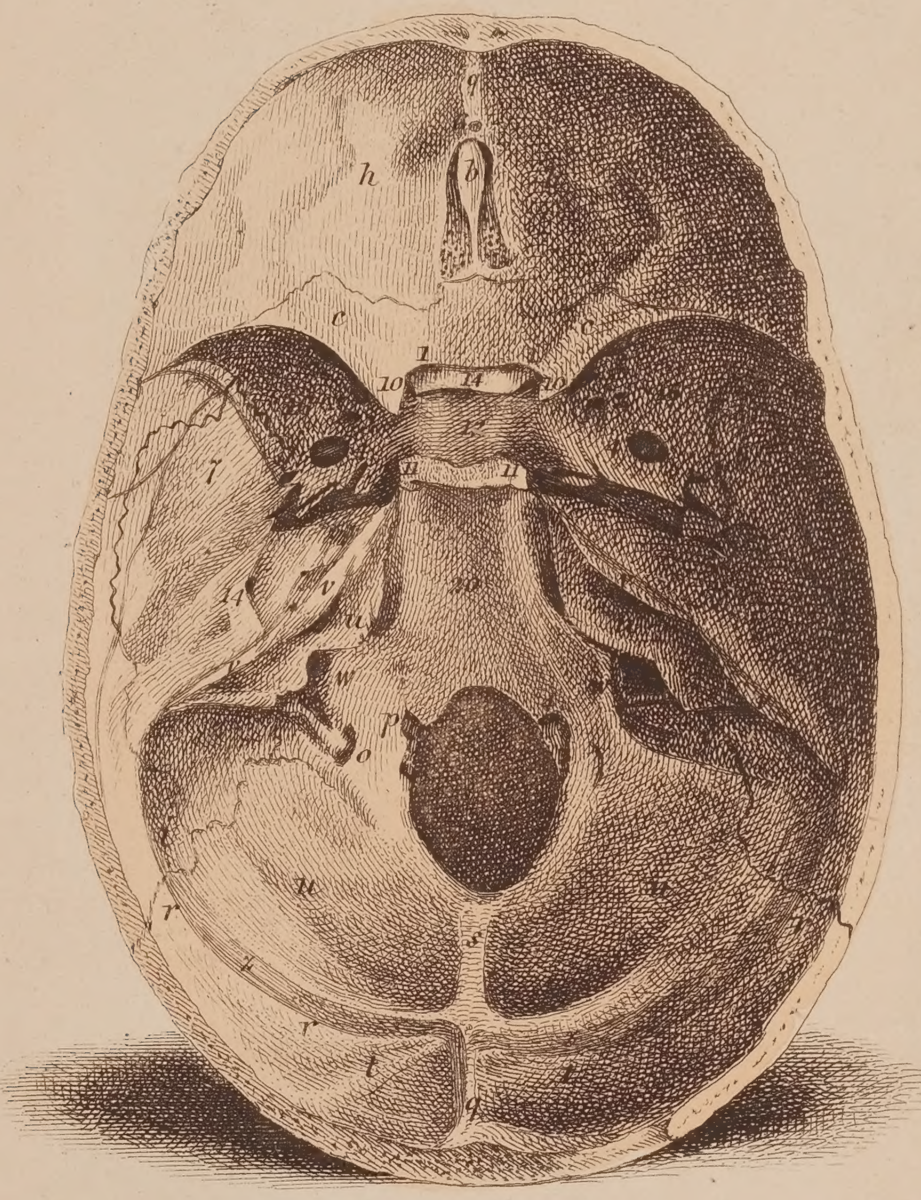

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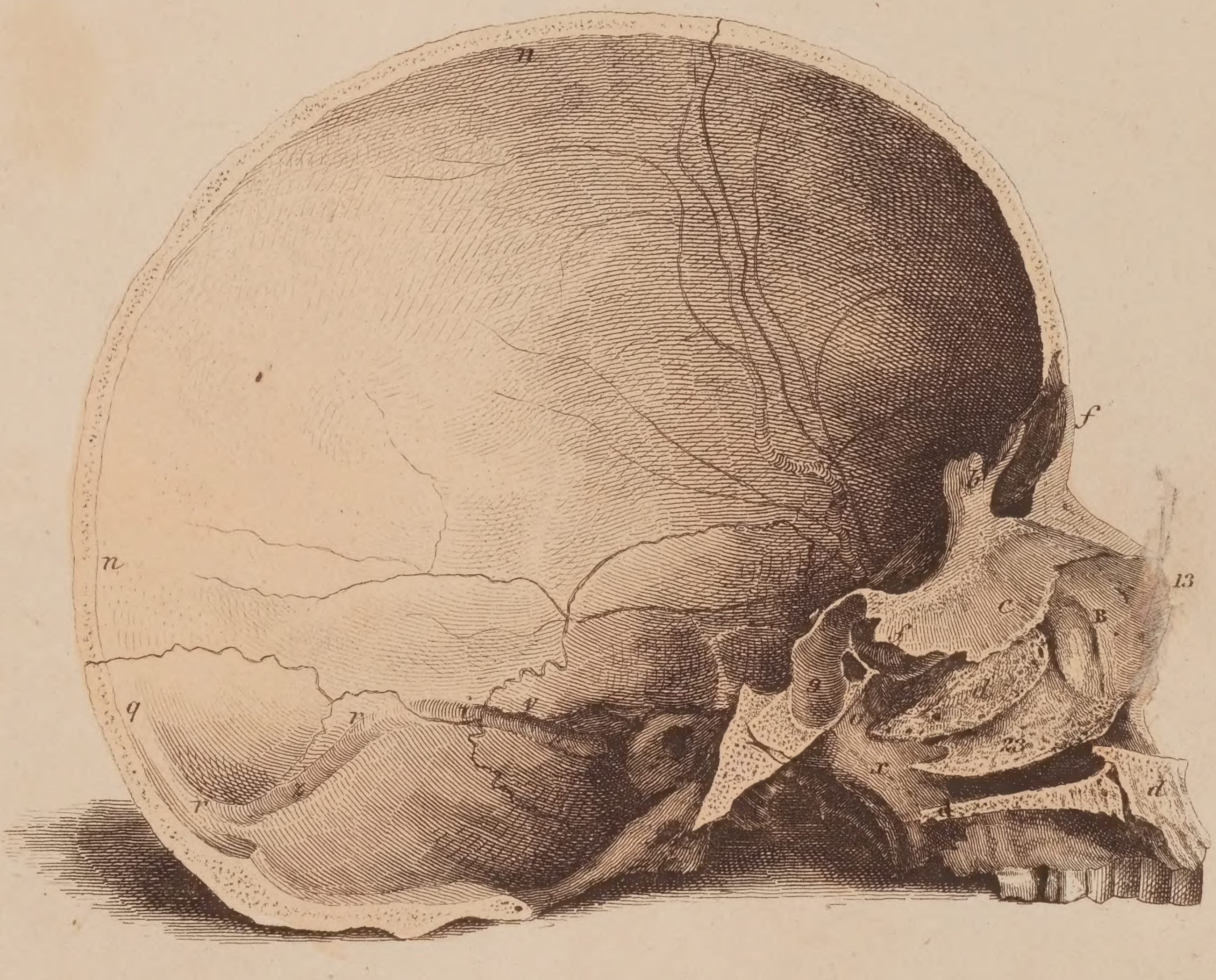

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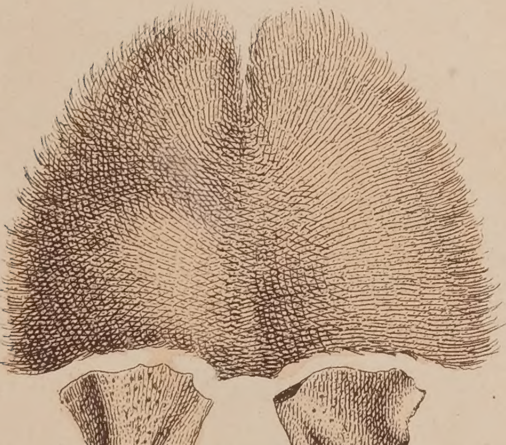

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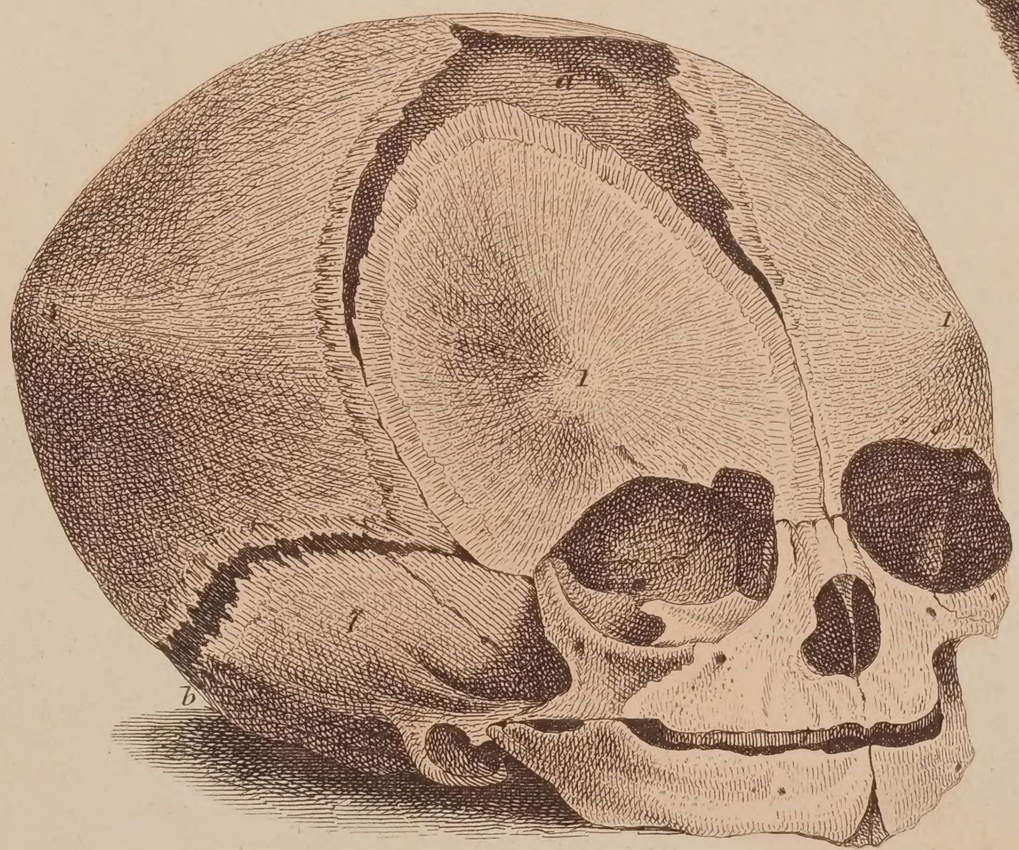

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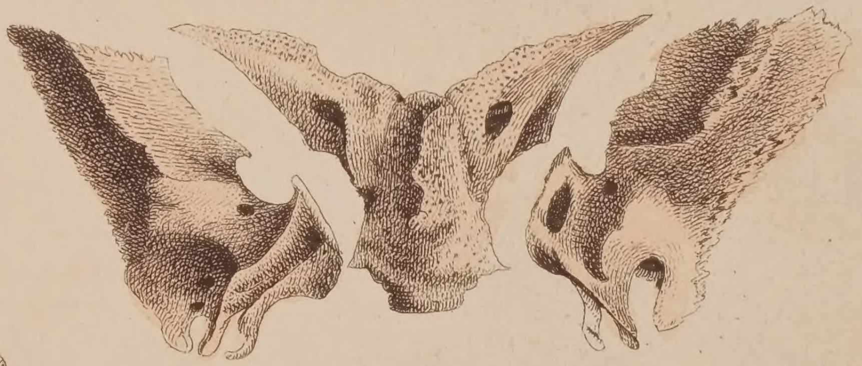
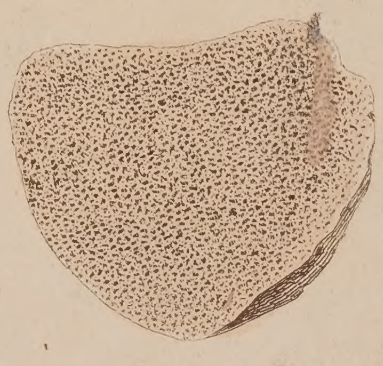


Fig. 8.



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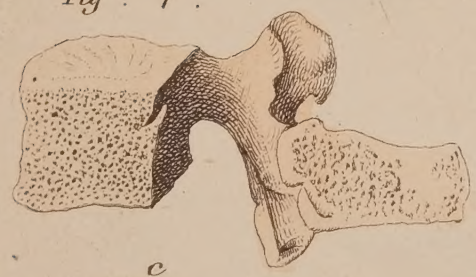

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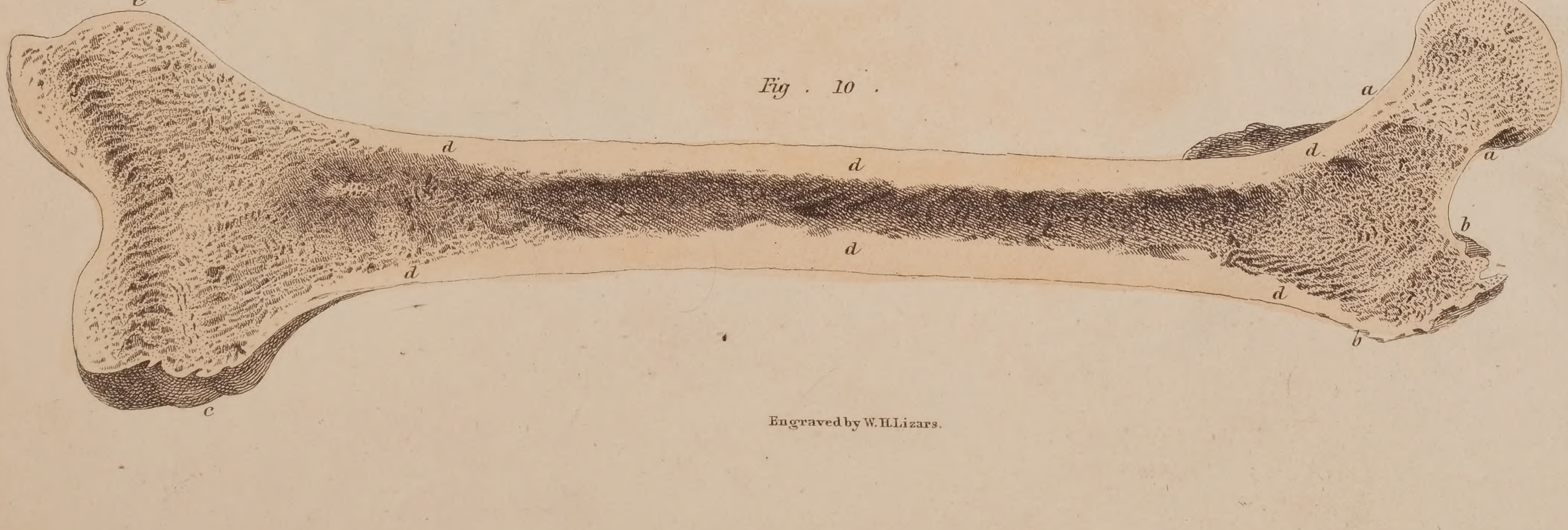
c
a
d
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d
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b
d
d
d
b
c

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Fig 7. K. squamous portion (a) Zygomatic process (b) Eminentia Articulares
(C) squamous border (d) mastoid foramen border (E) Glenoid Fossa (f) Stylo Mastoid foramen
(g) Glasserian fissure (h) Digastric fossa. (l) Ext Auditory (m) Mastoid process (n)
occipital groove. (q) R vaginal process
l

PLATE V.

Fig. 1.

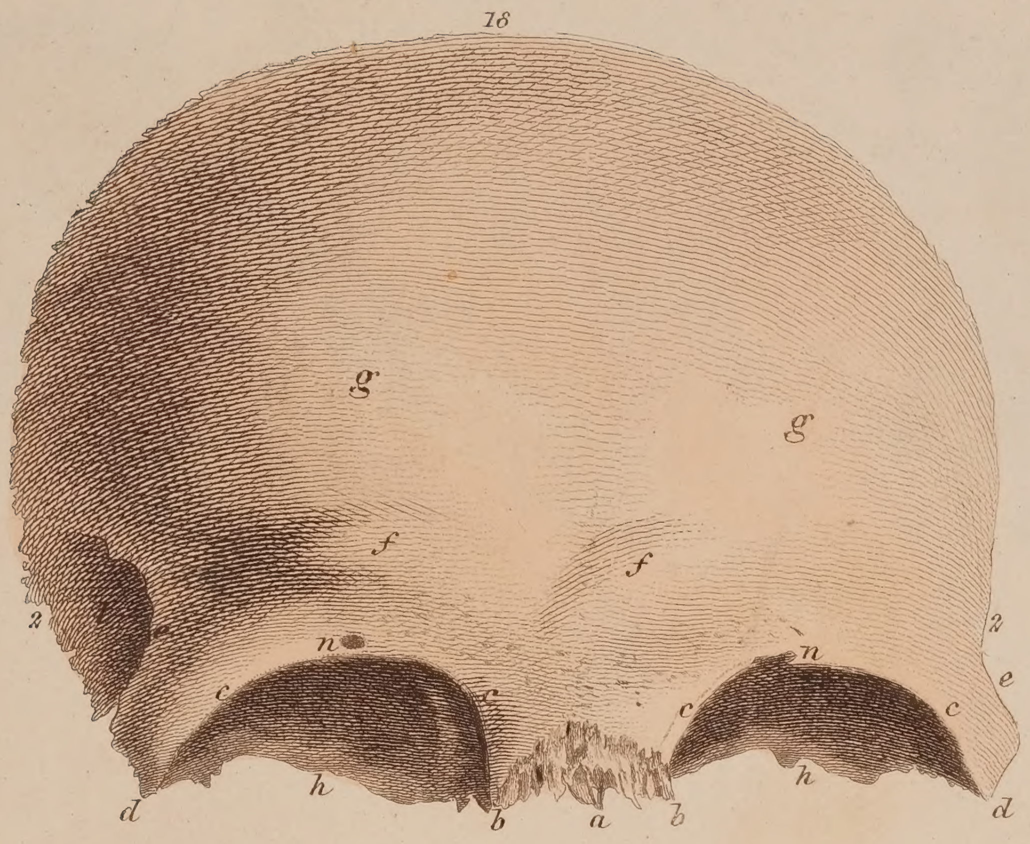
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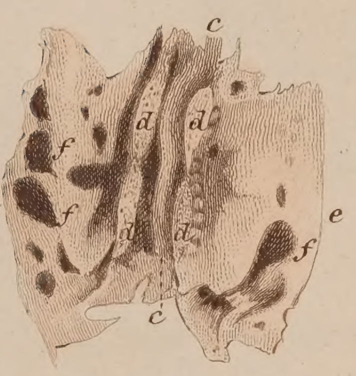
Fig. 12.



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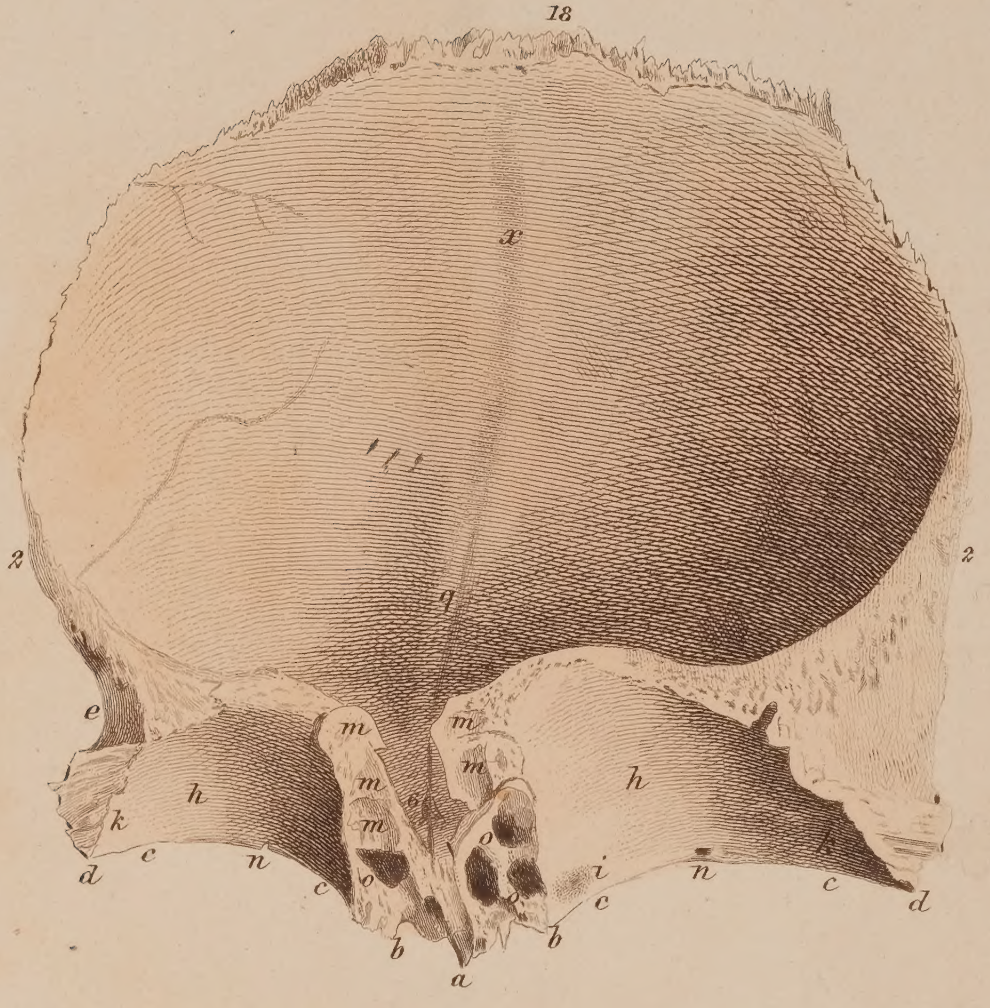
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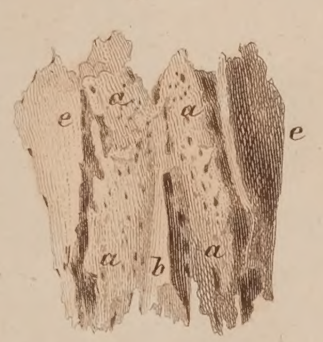
Fig. 11.



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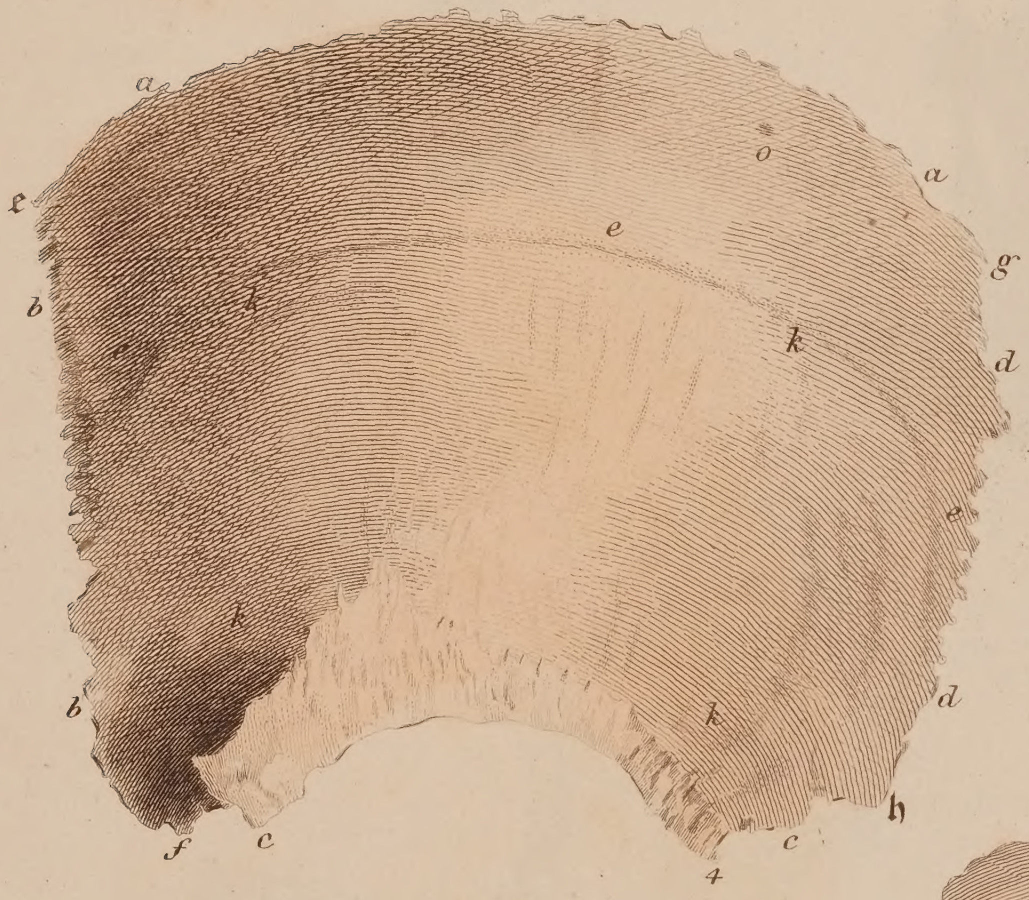
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Fig. 4.

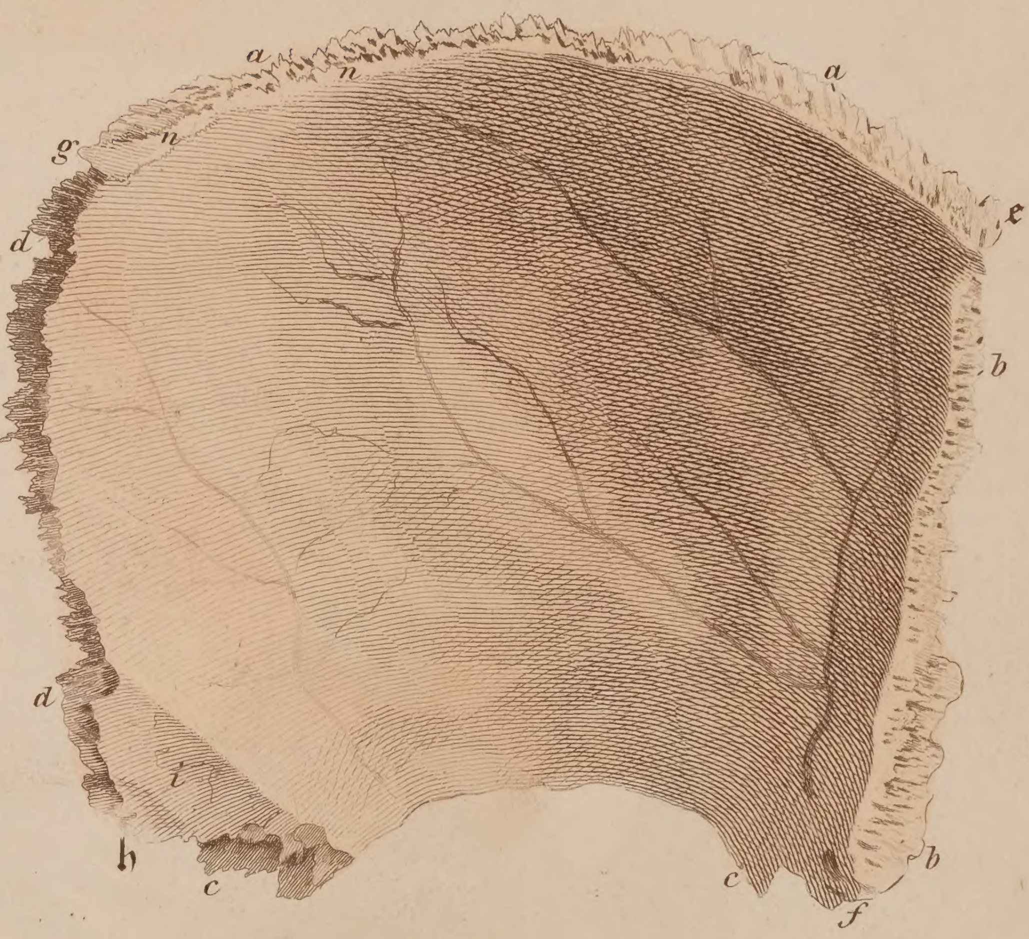
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Fig. 7.

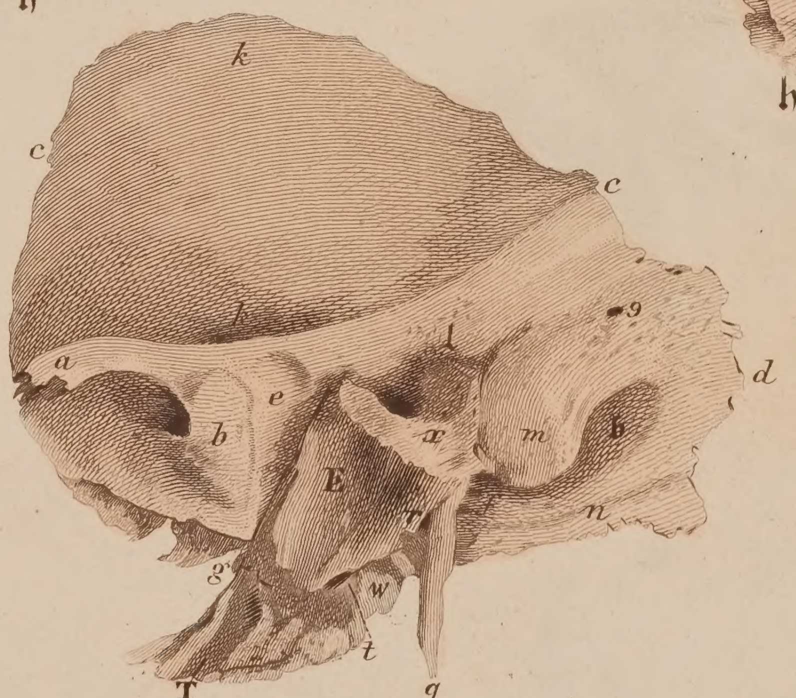
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Fig. 5.

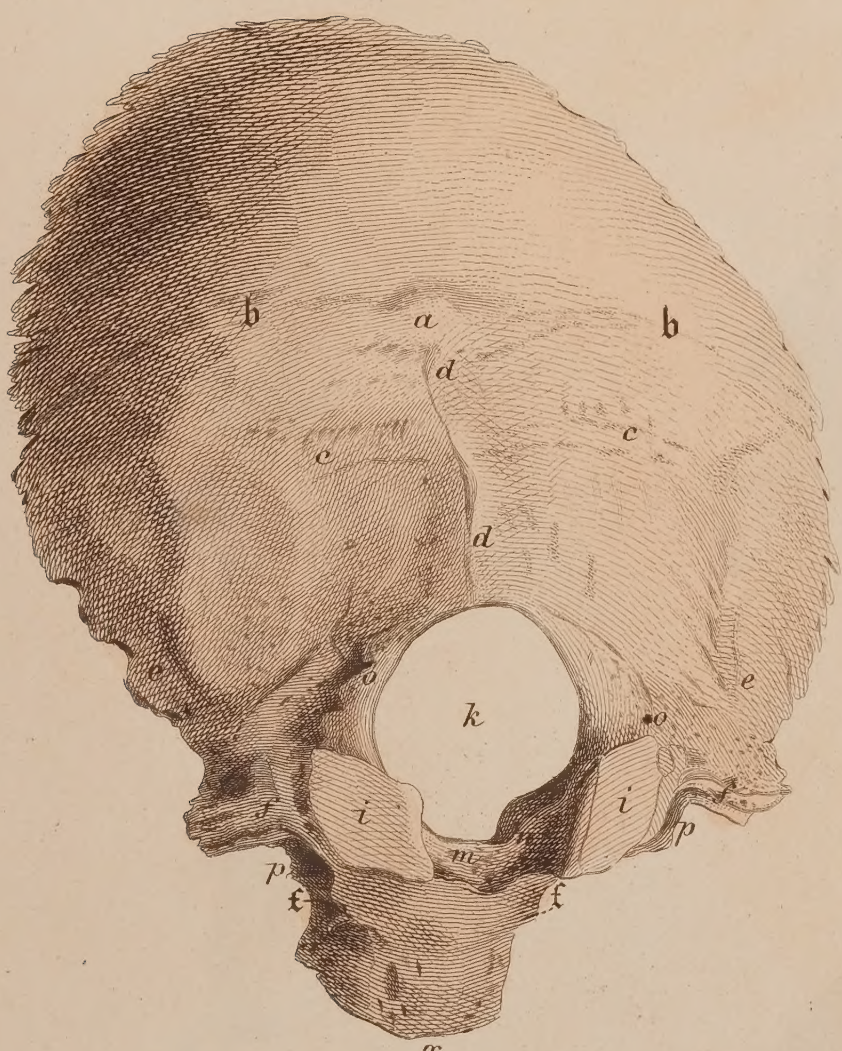
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Fig. 6.

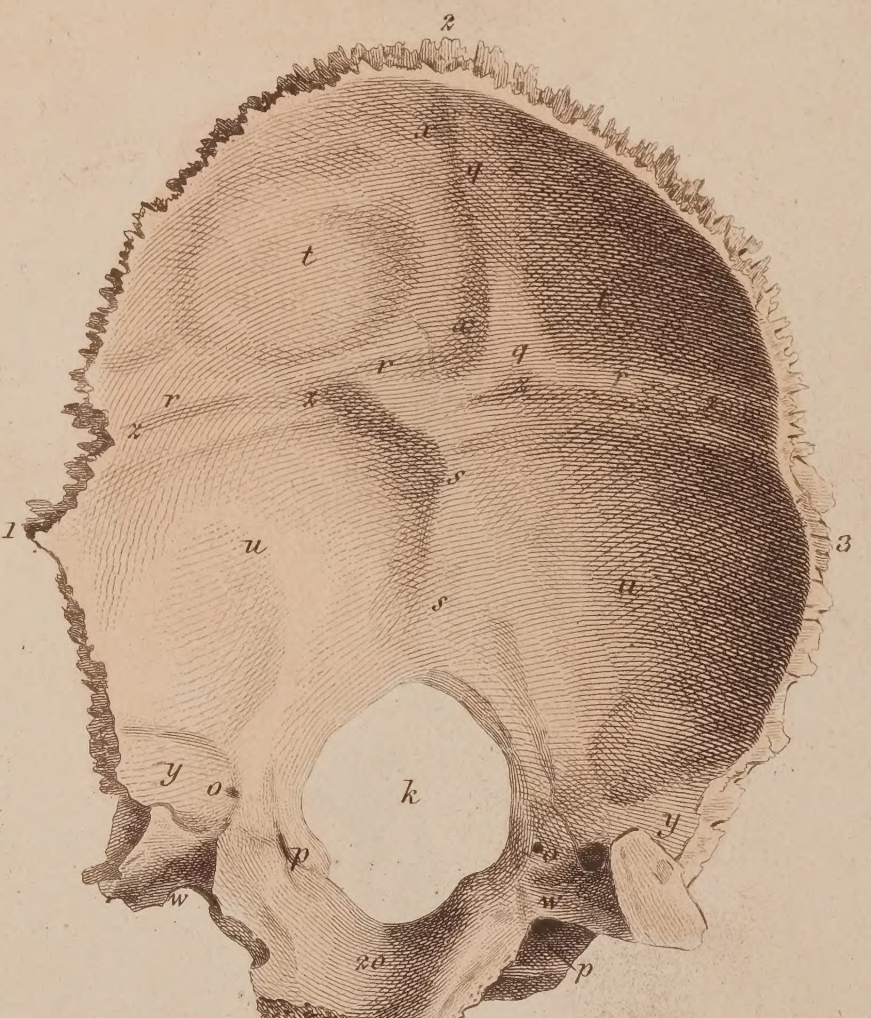
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Fig. 8.

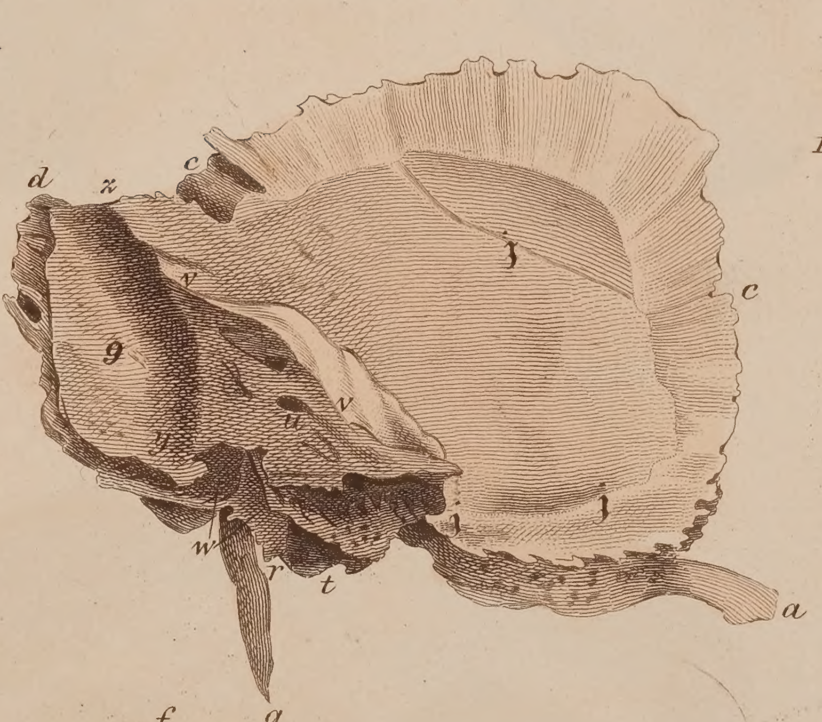
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Fig. 9.

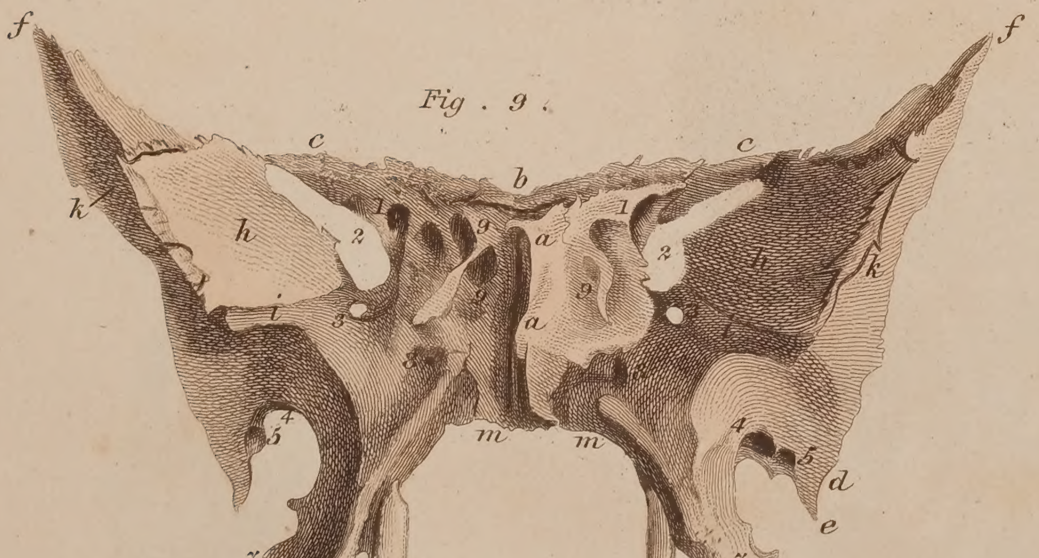
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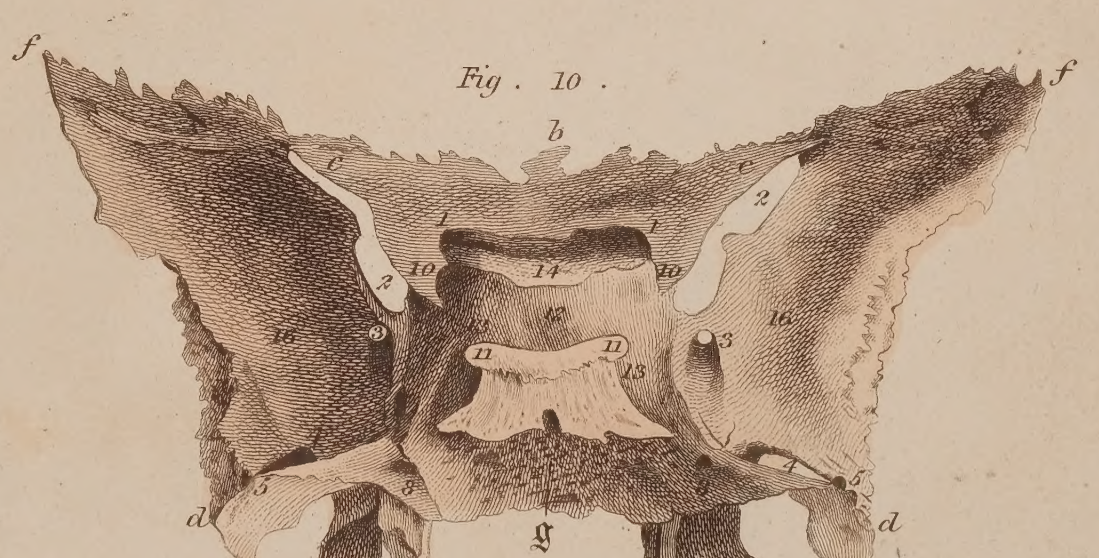
Fig. 10.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l

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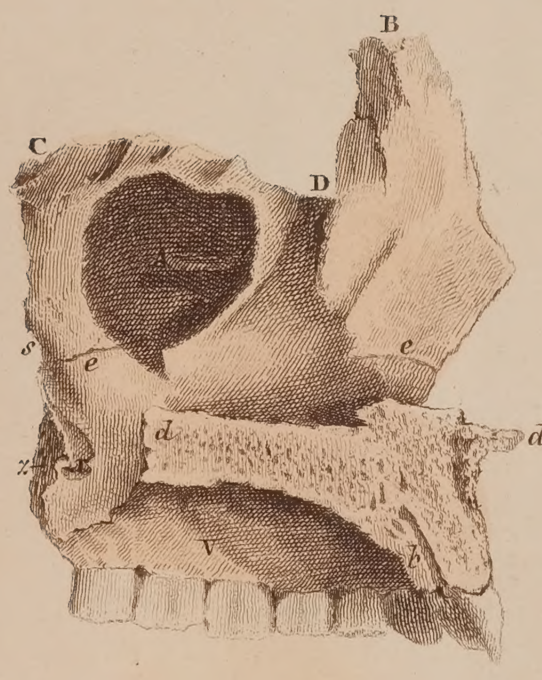
PLATE VI.

Fig. 16.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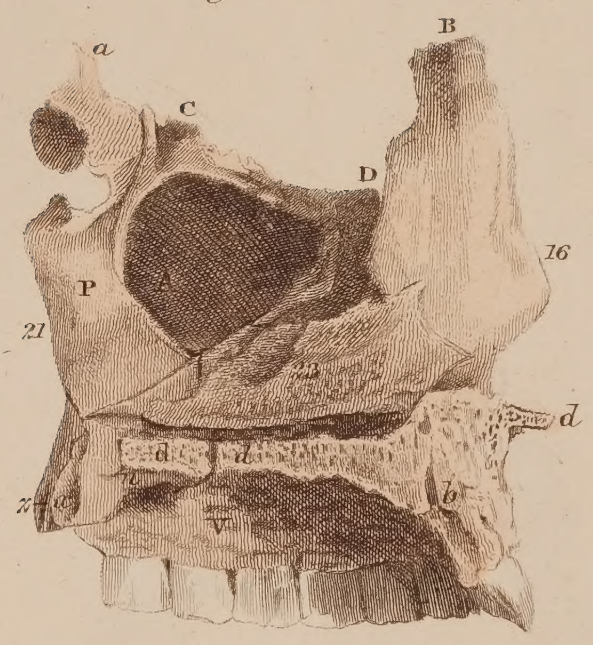
V

Fig. 27.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V
b

Fig. 15.

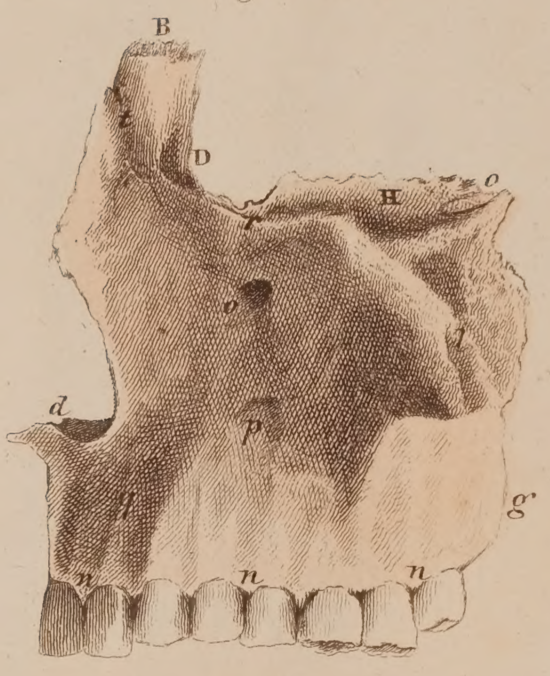
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Fig. 24.

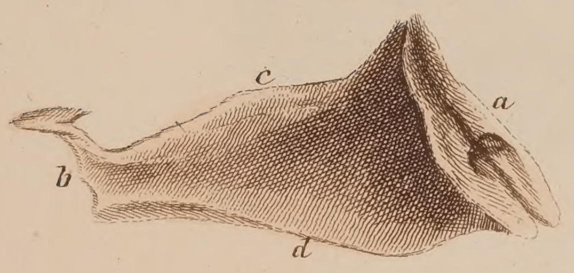
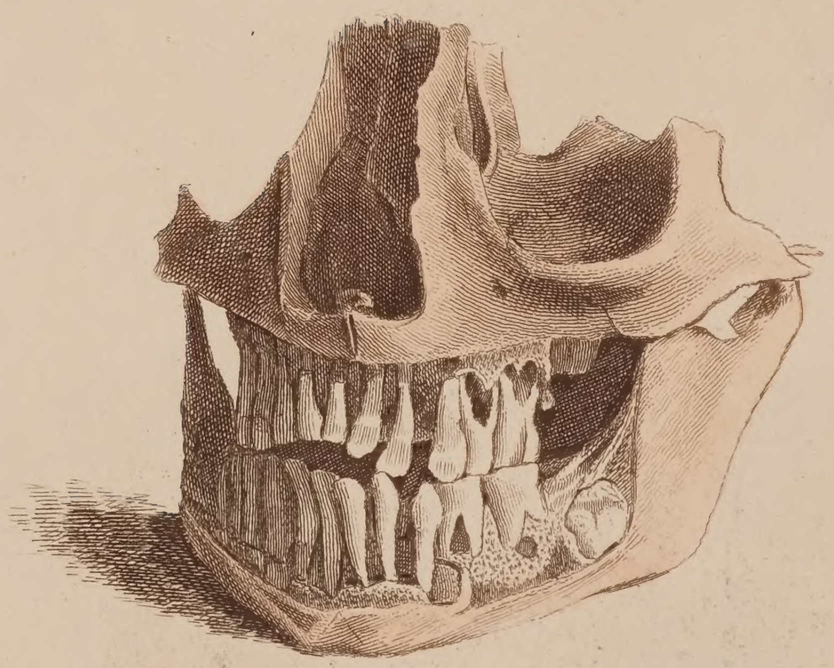


Fig. 28.



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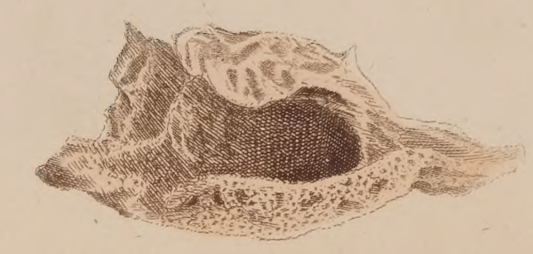

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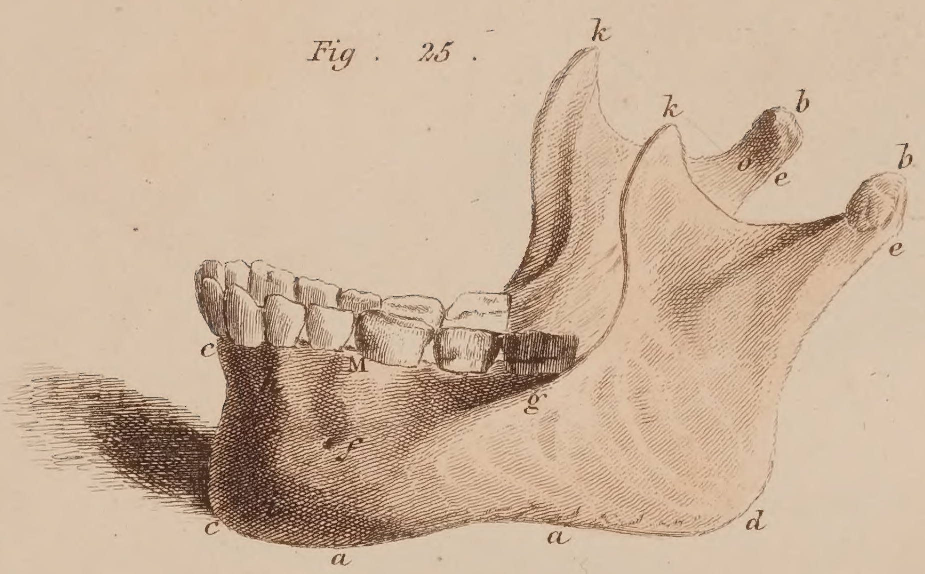
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M
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a
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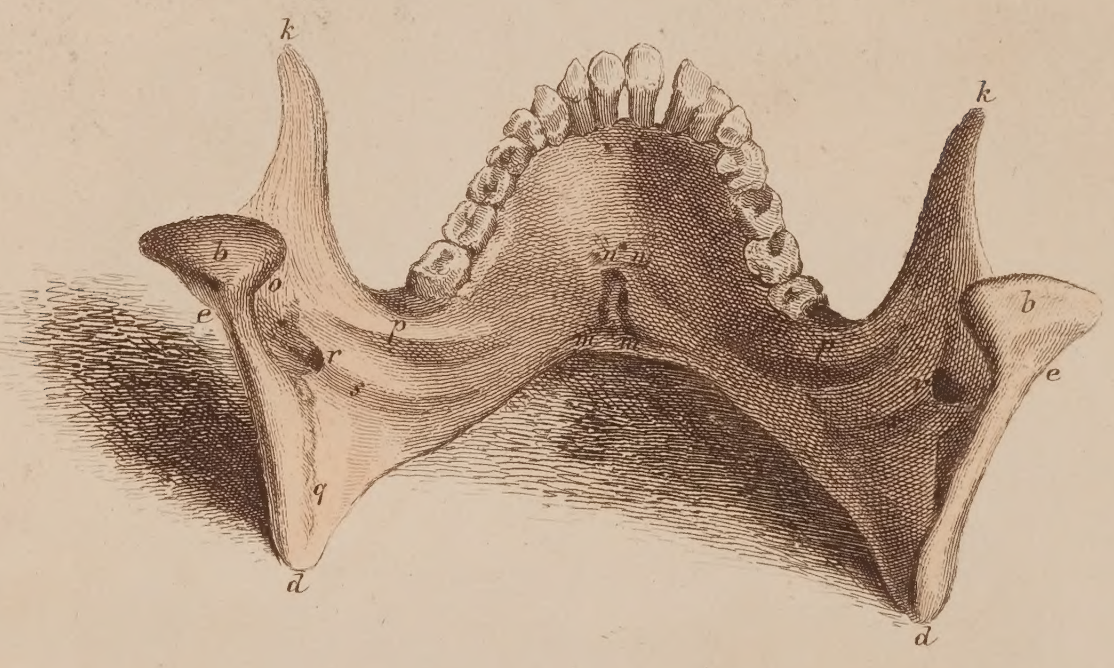
Fig. 26.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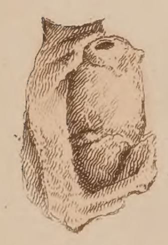
q
d
d

Fig. 18.



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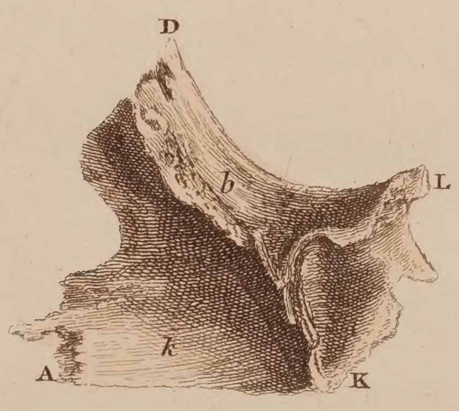

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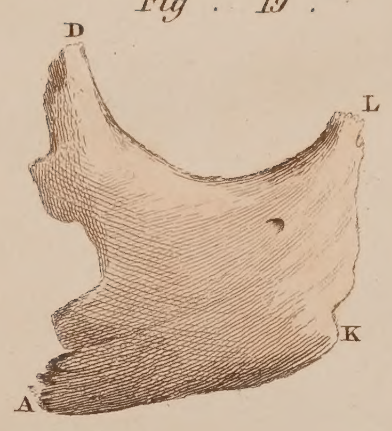

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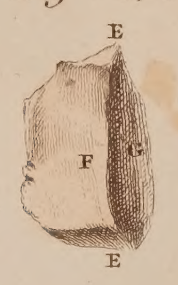

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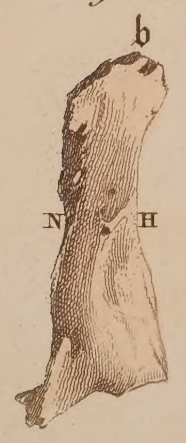

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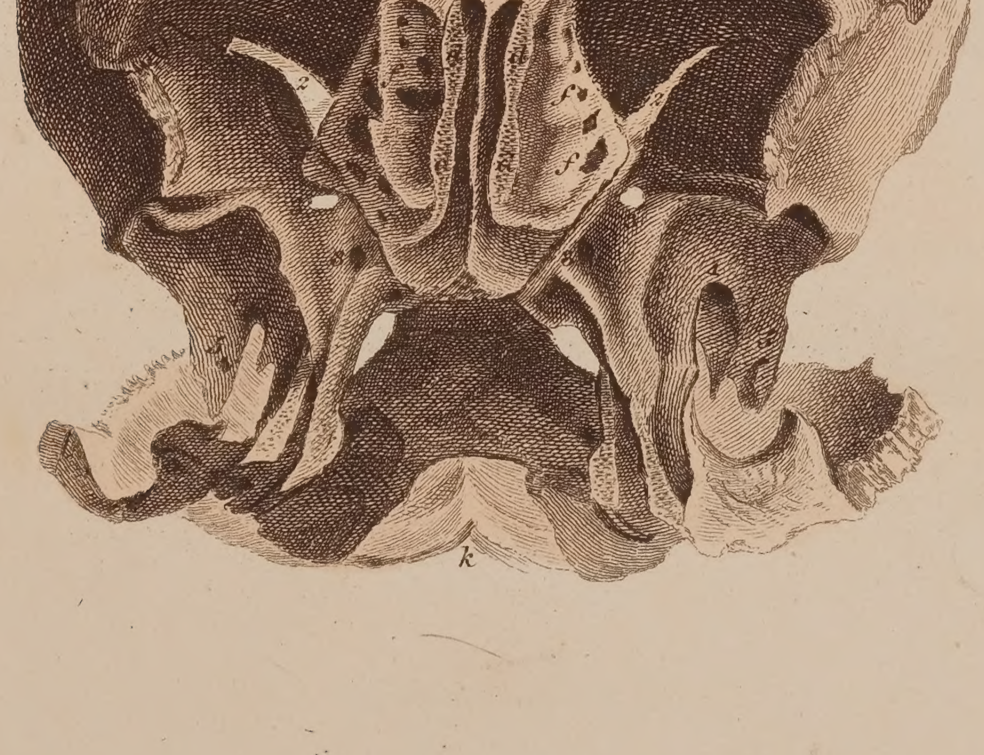

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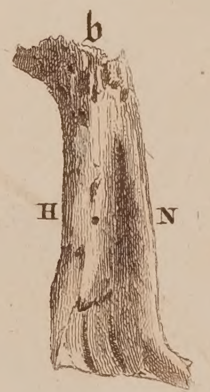

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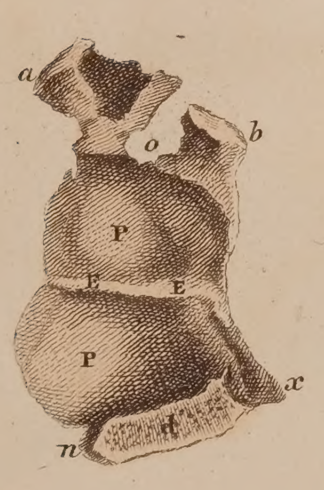

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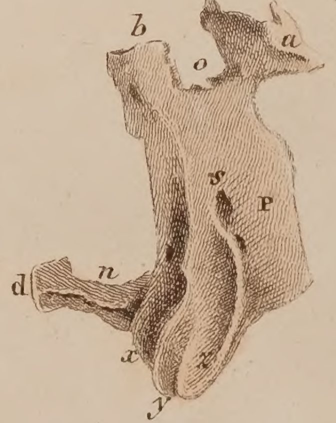

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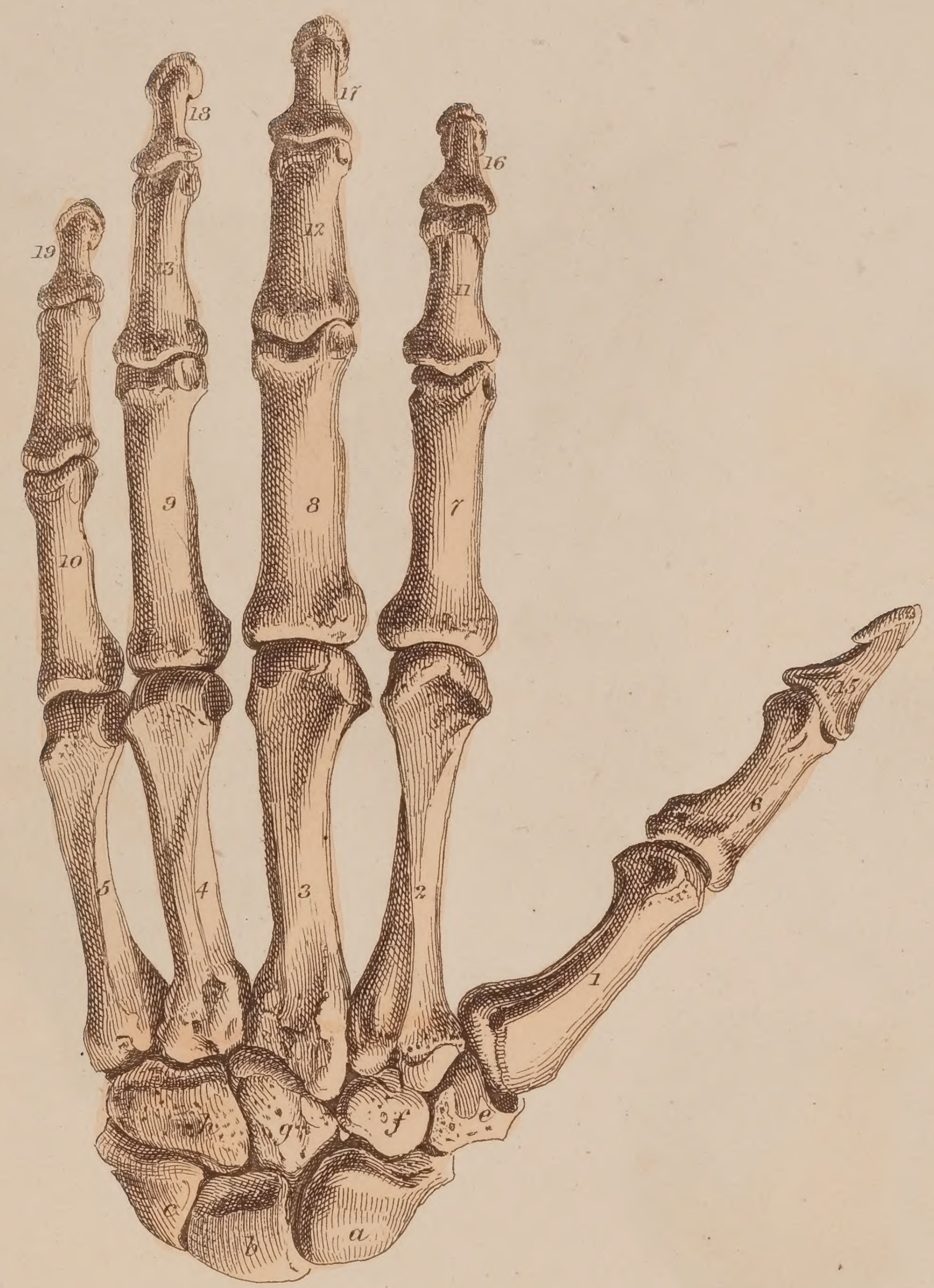
PLATE VII.

Fig. 7.



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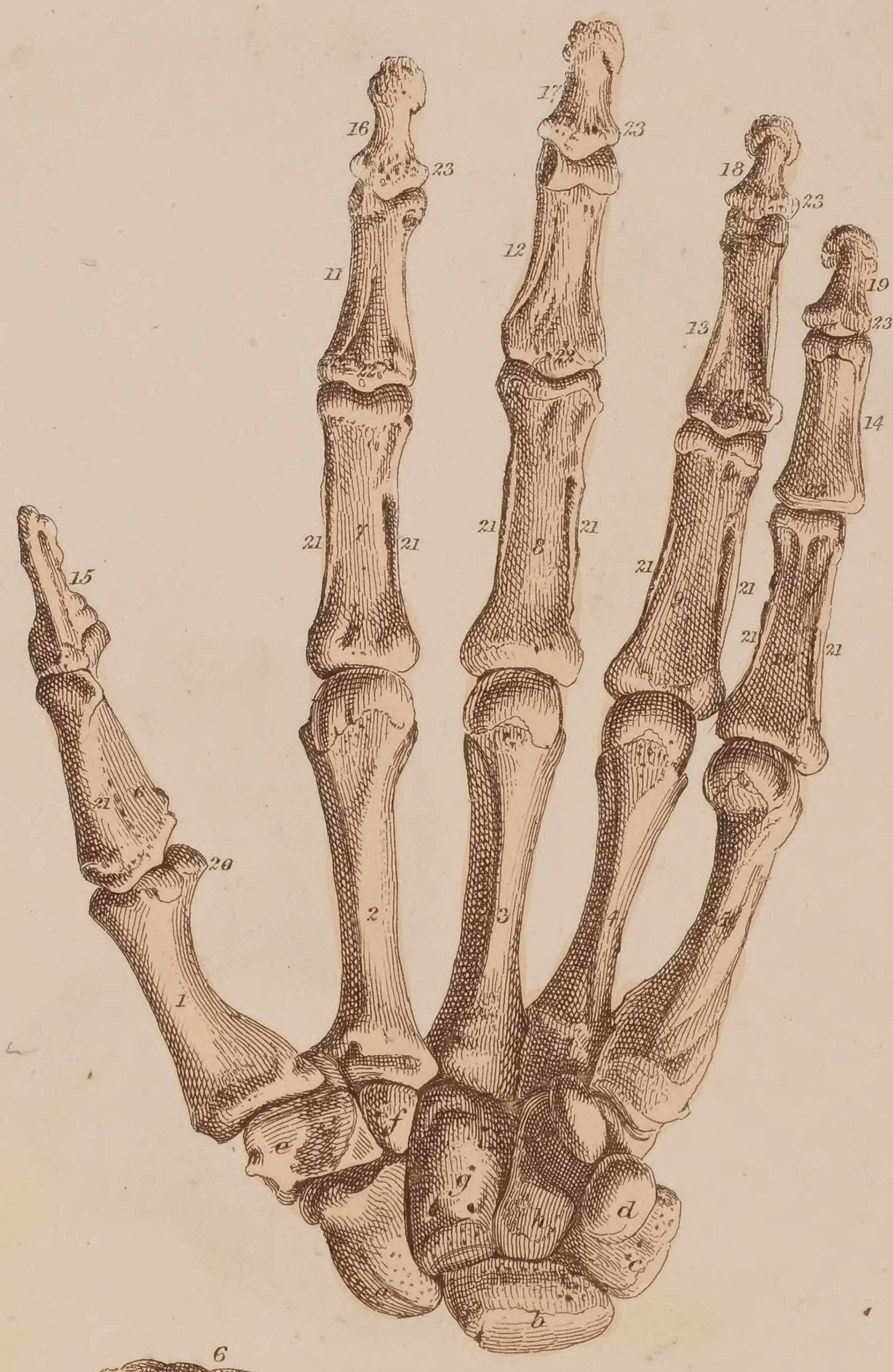

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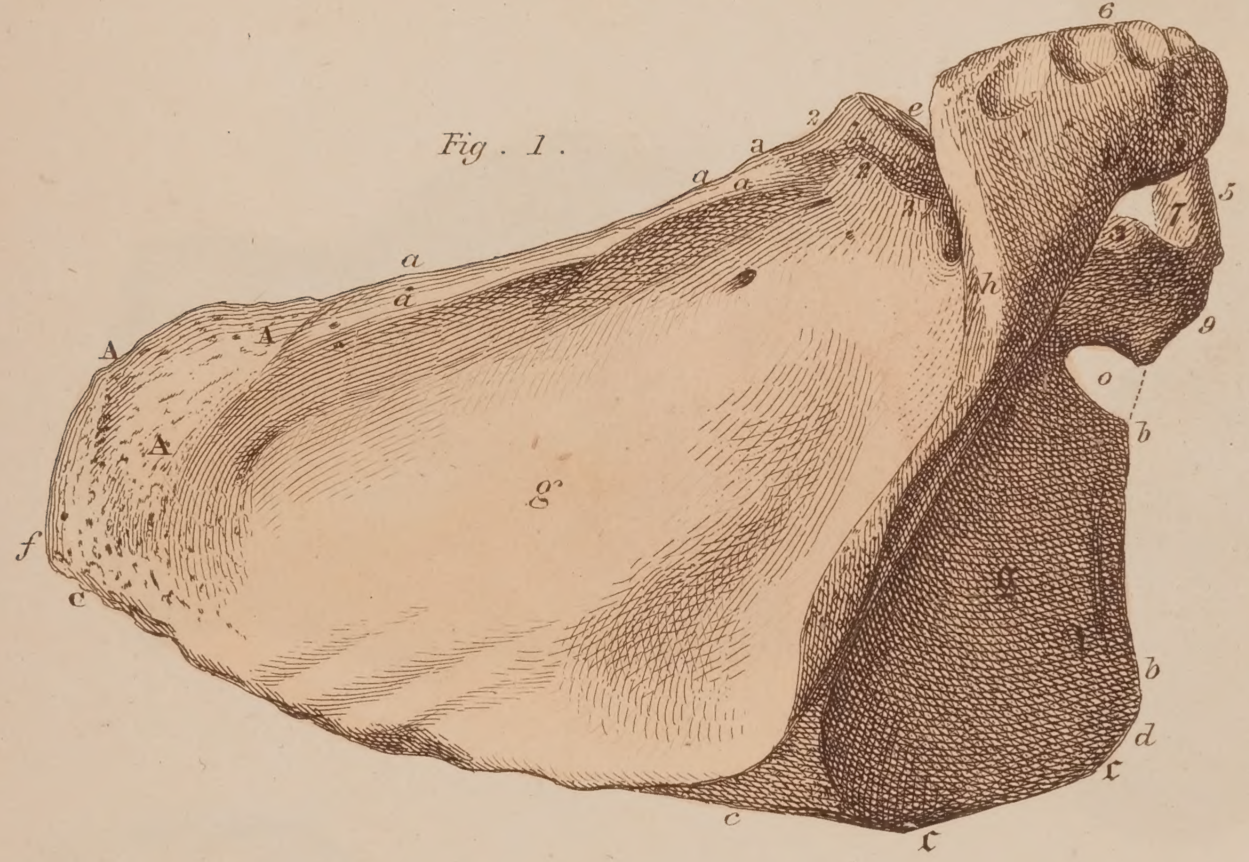

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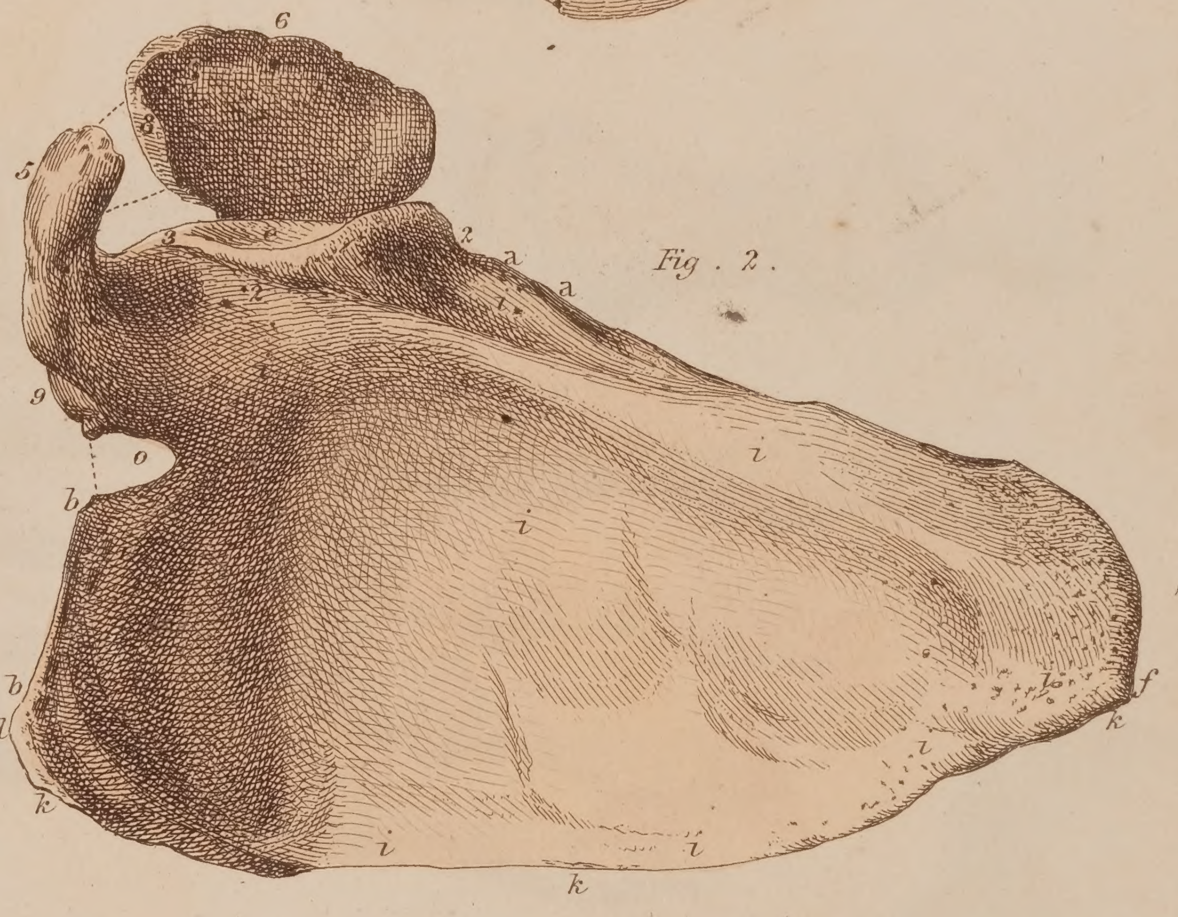

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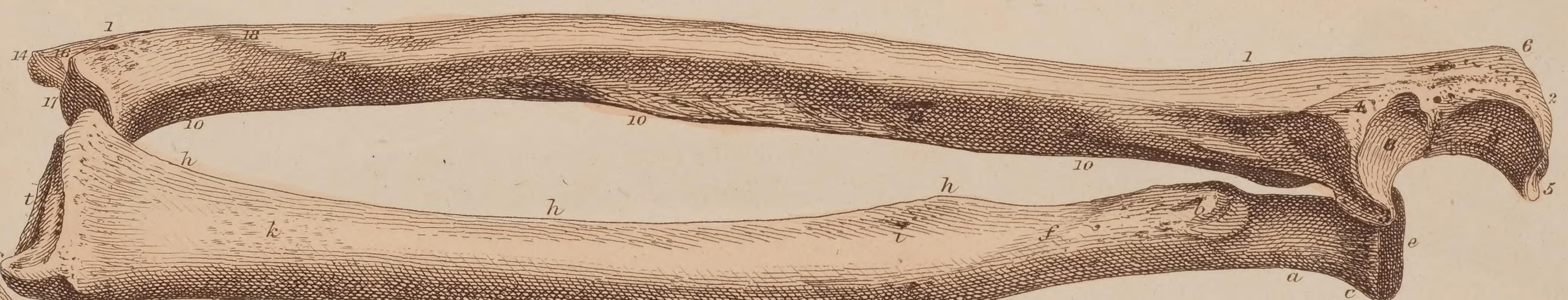

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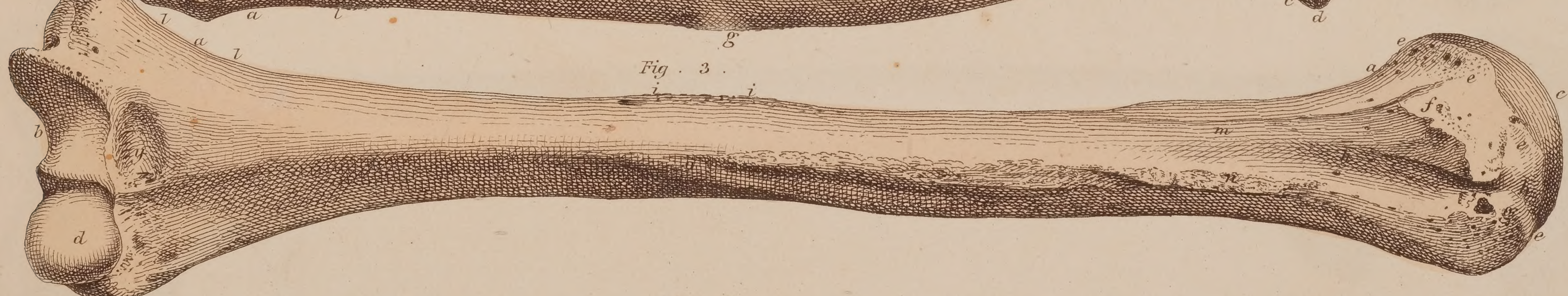

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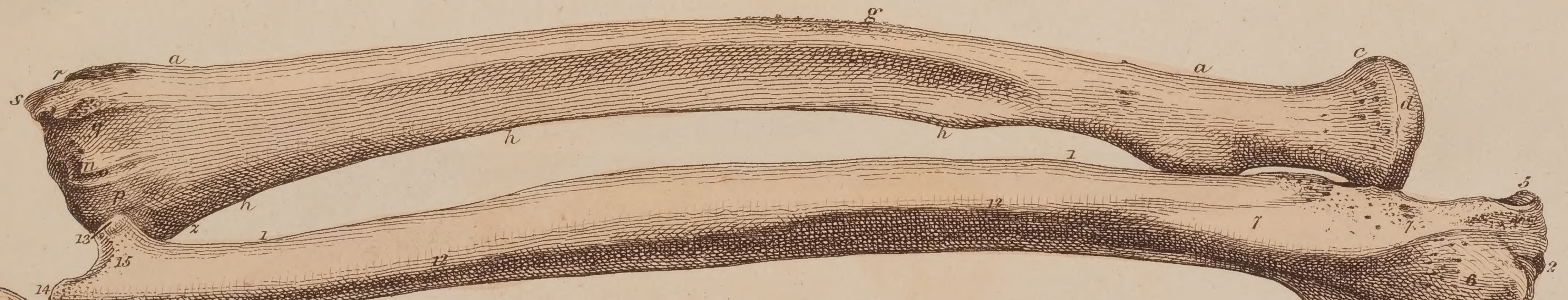

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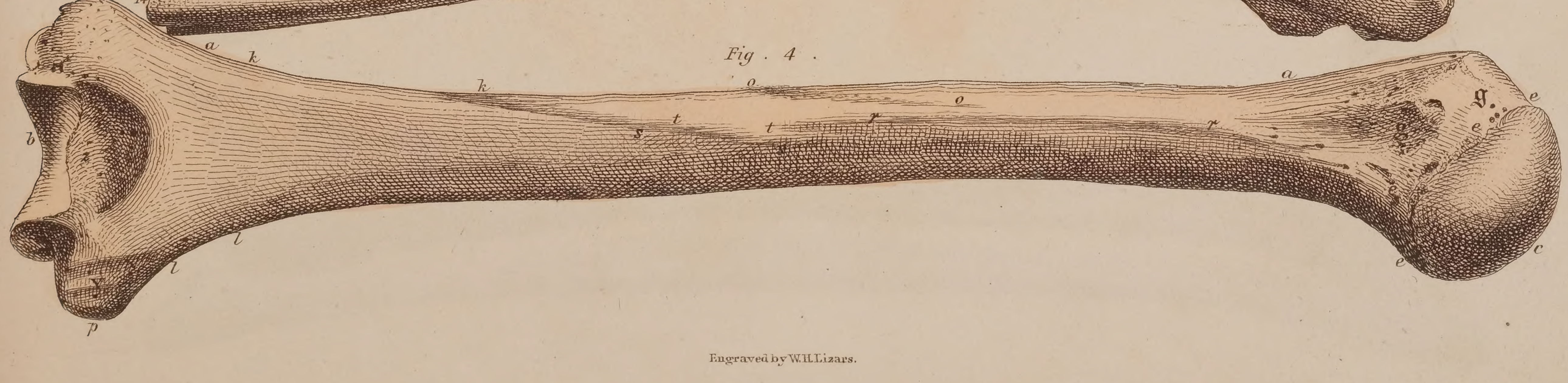

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PLATE VIII.

Fig. 1.

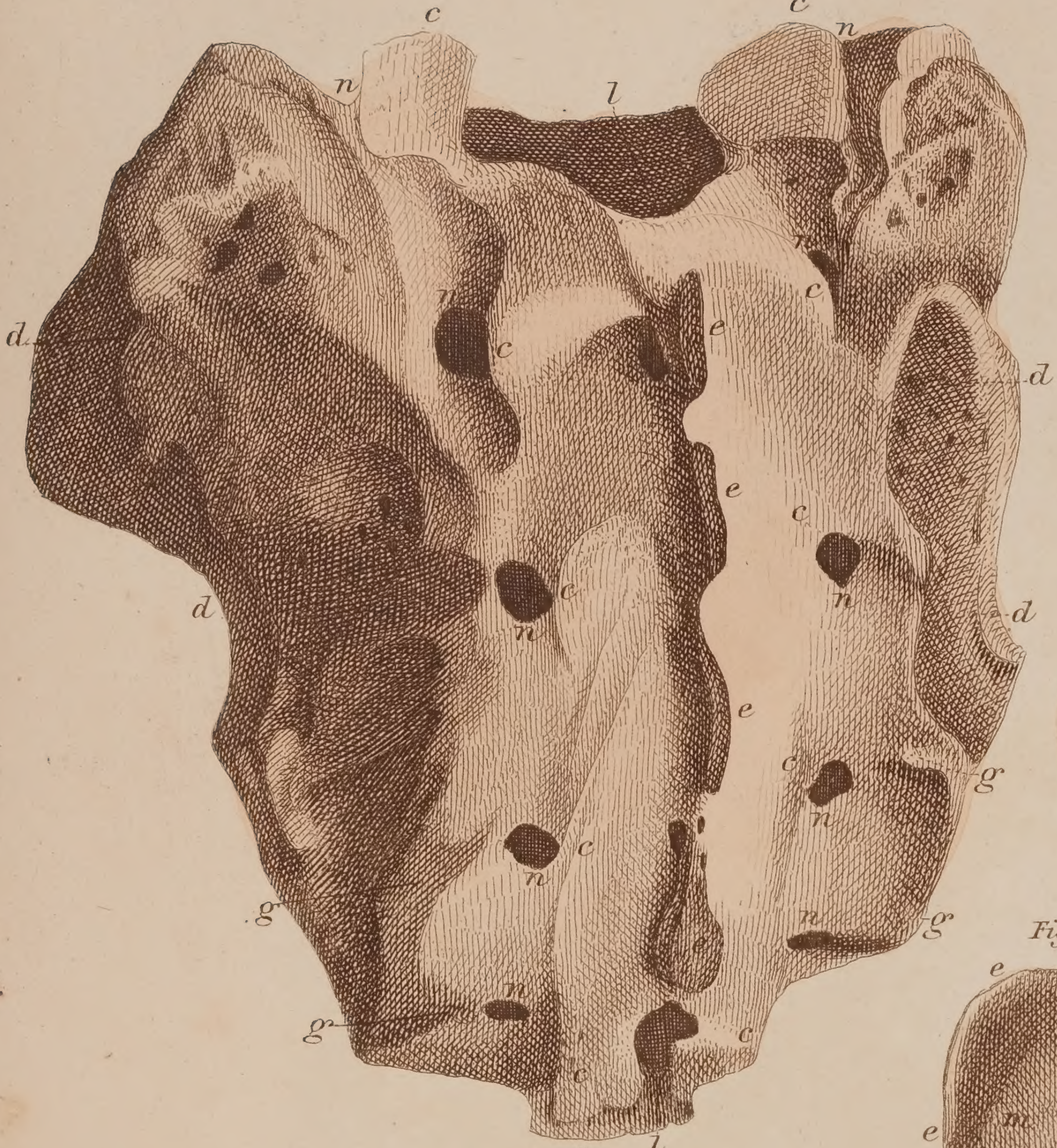
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Fig. 2.

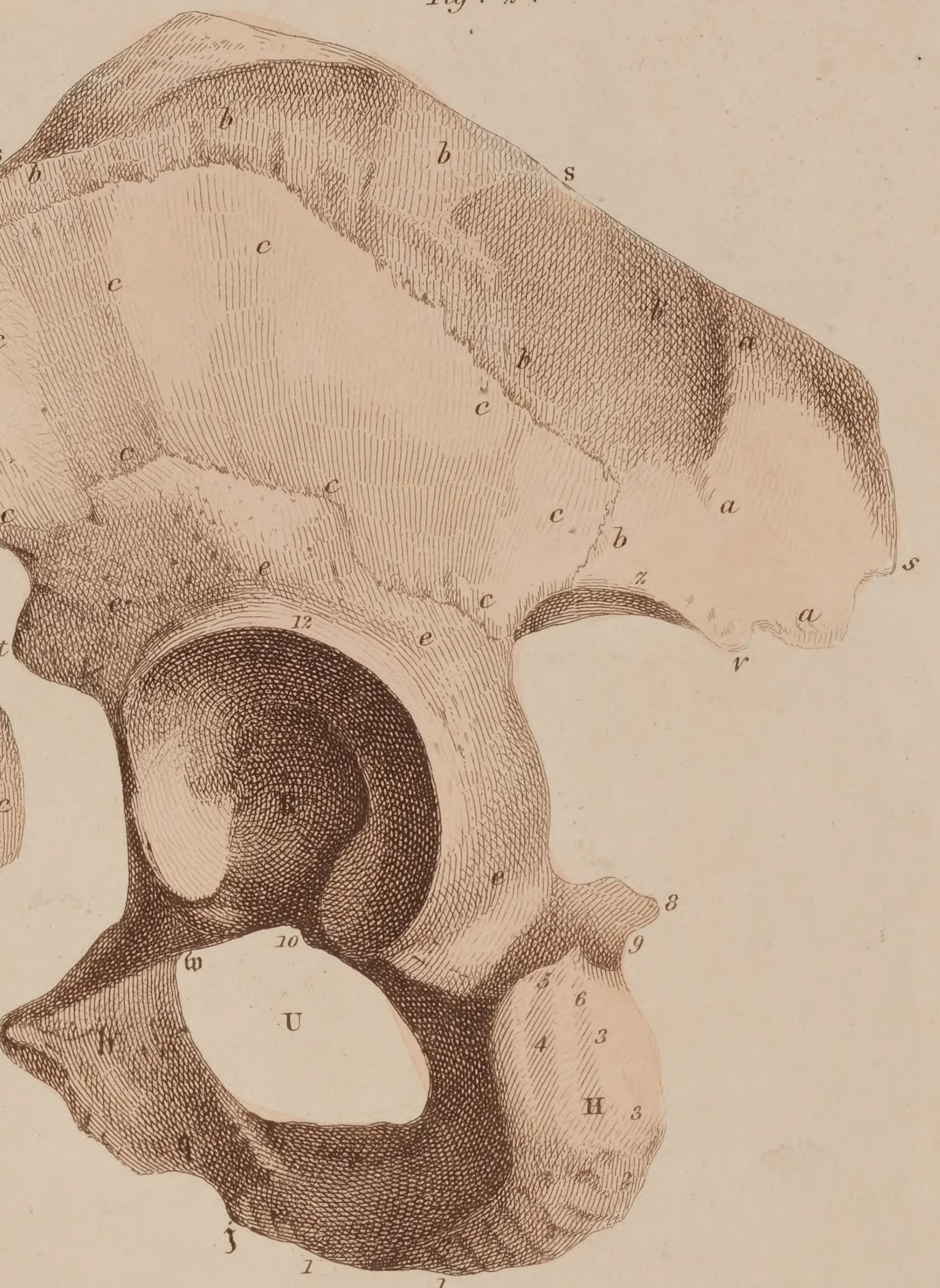
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Fig. 5.

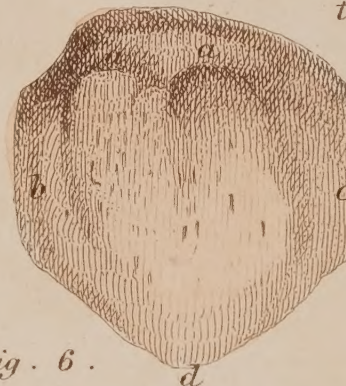
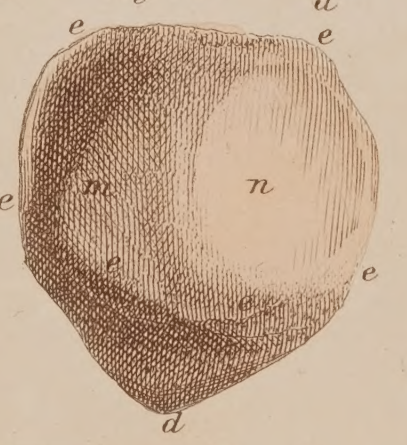


Fig. 6.



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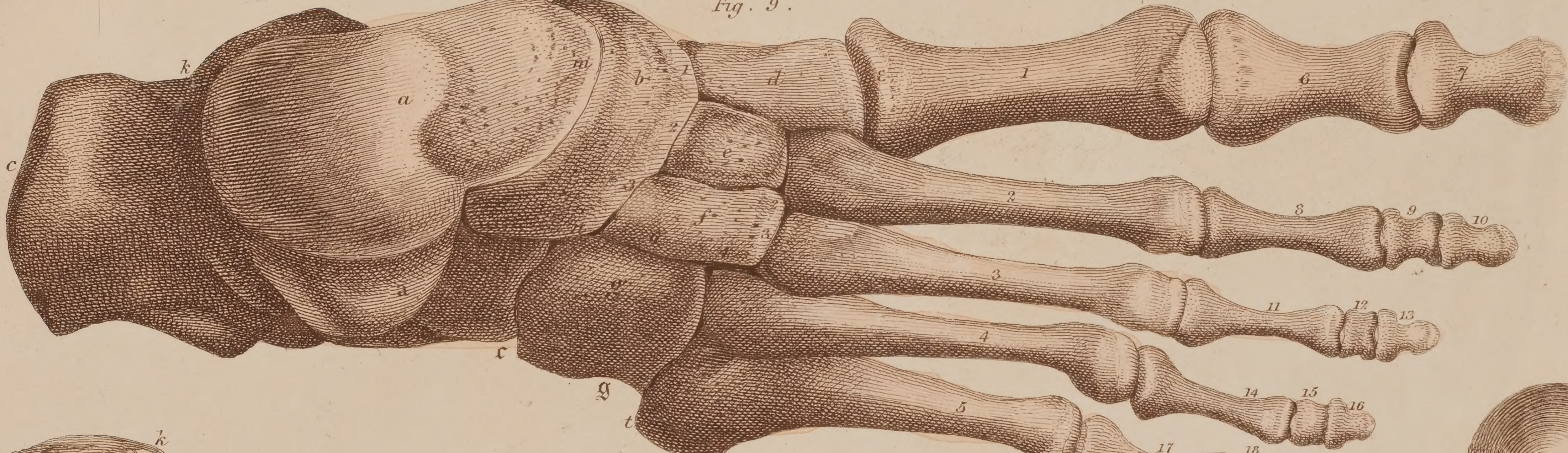
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Fig. 4.

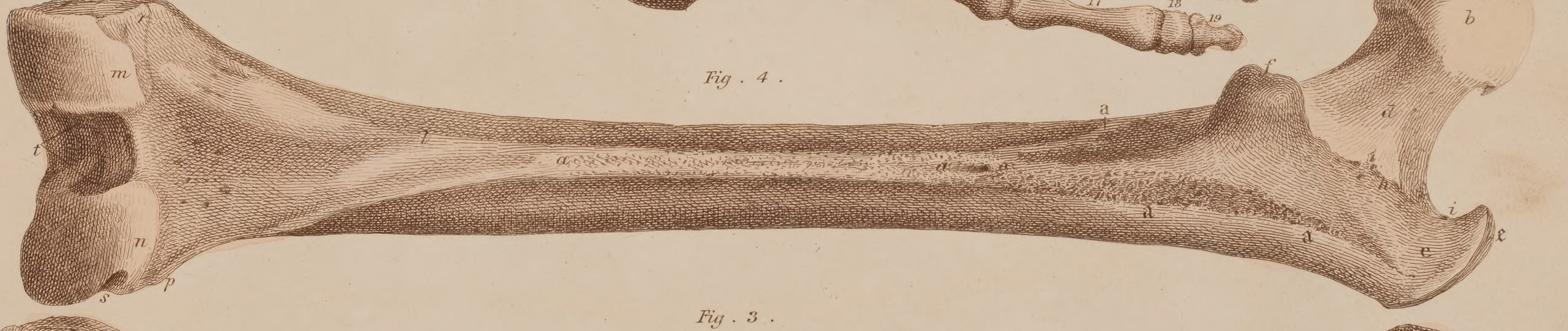
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Fig. 3.

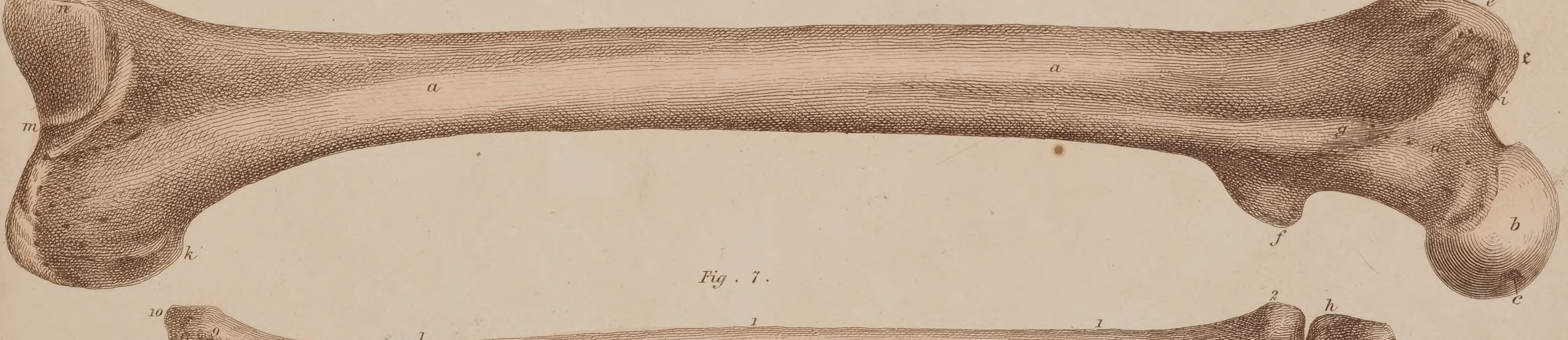
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Fig. 7.

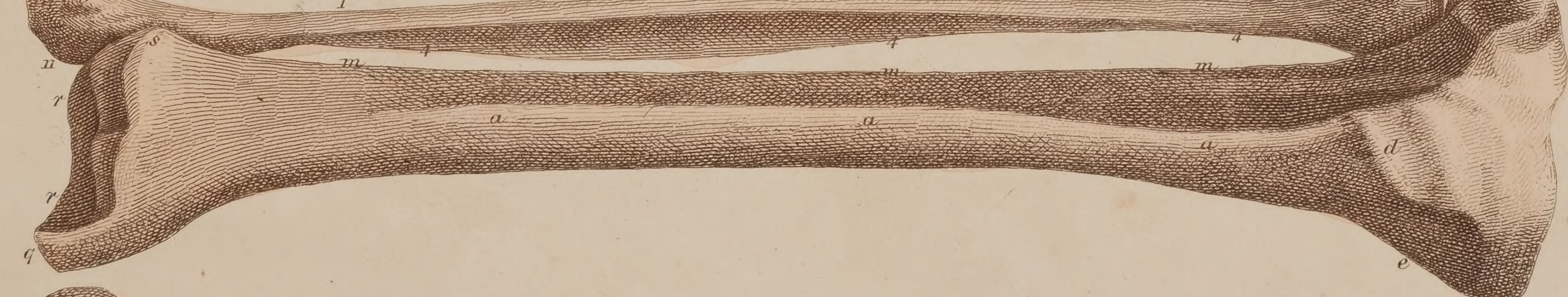
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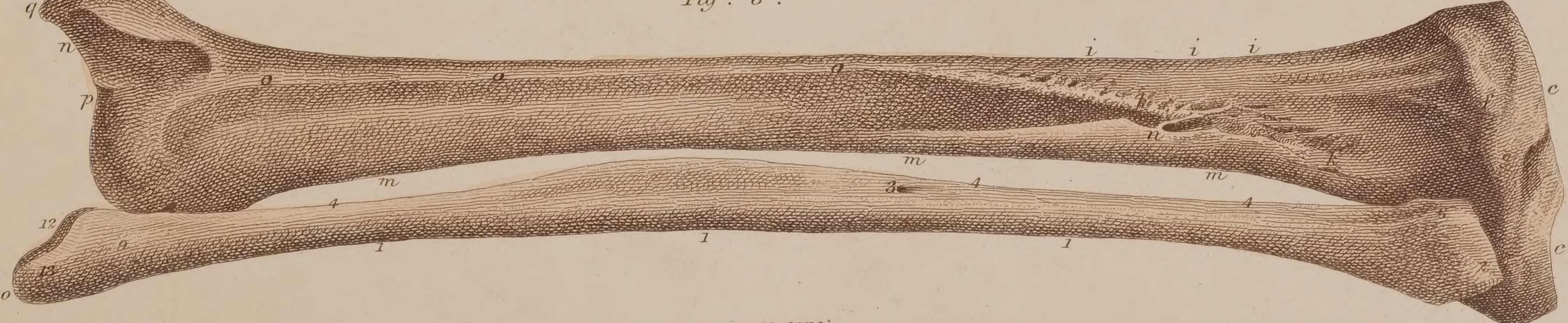
Fig. 8.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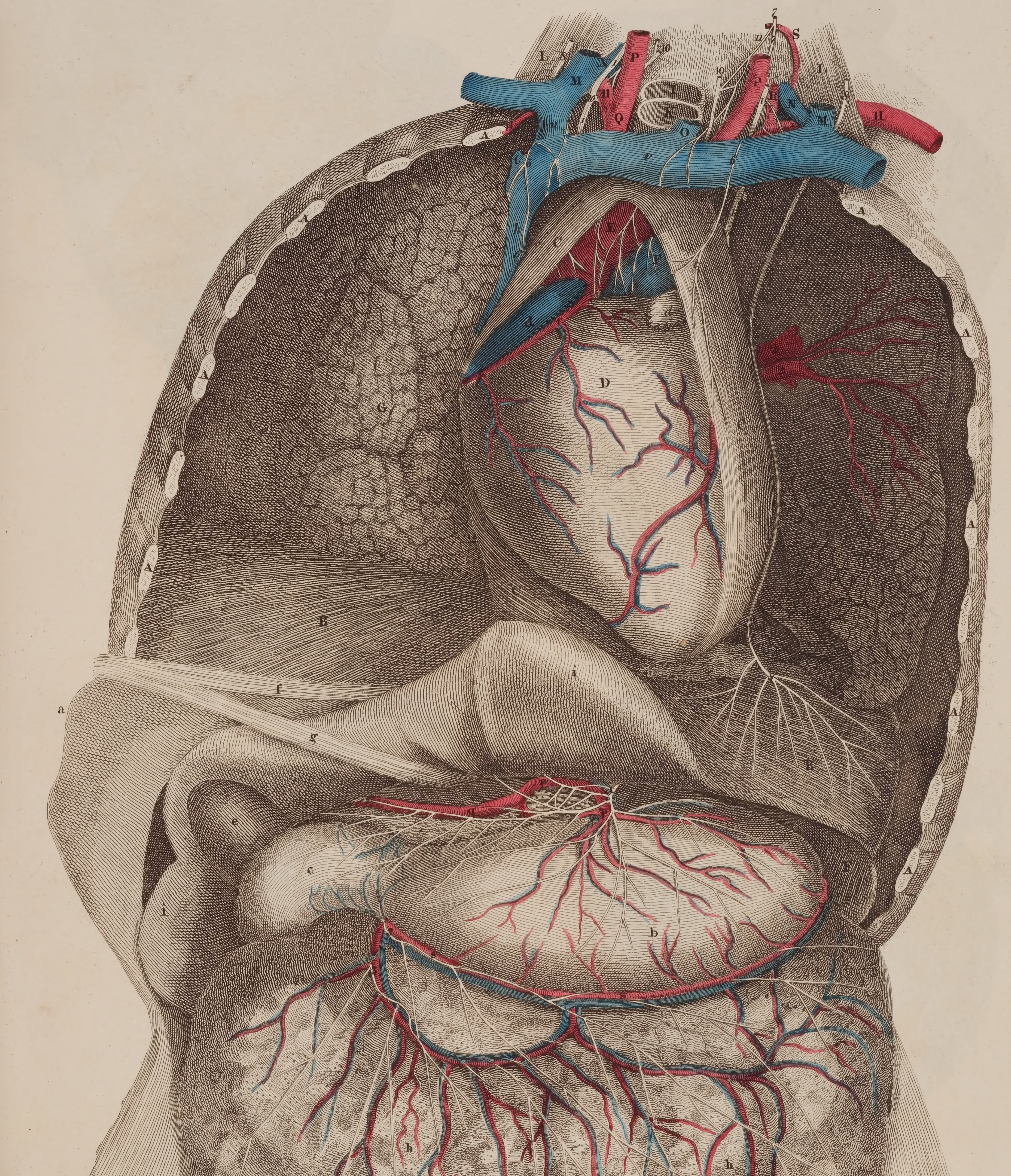
PLATE, I.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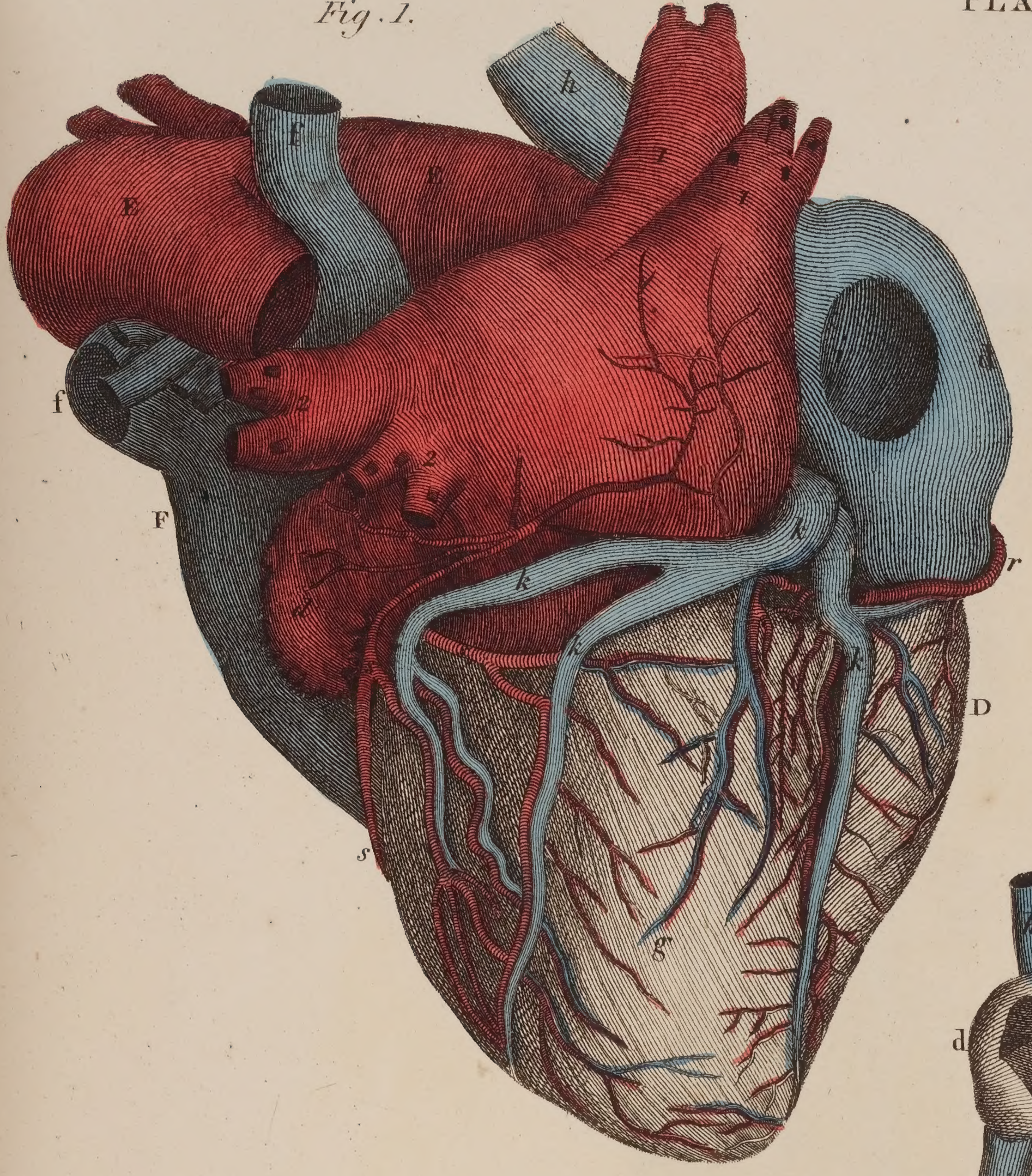
Engraved by W.H.Lizars.

PLATE II.



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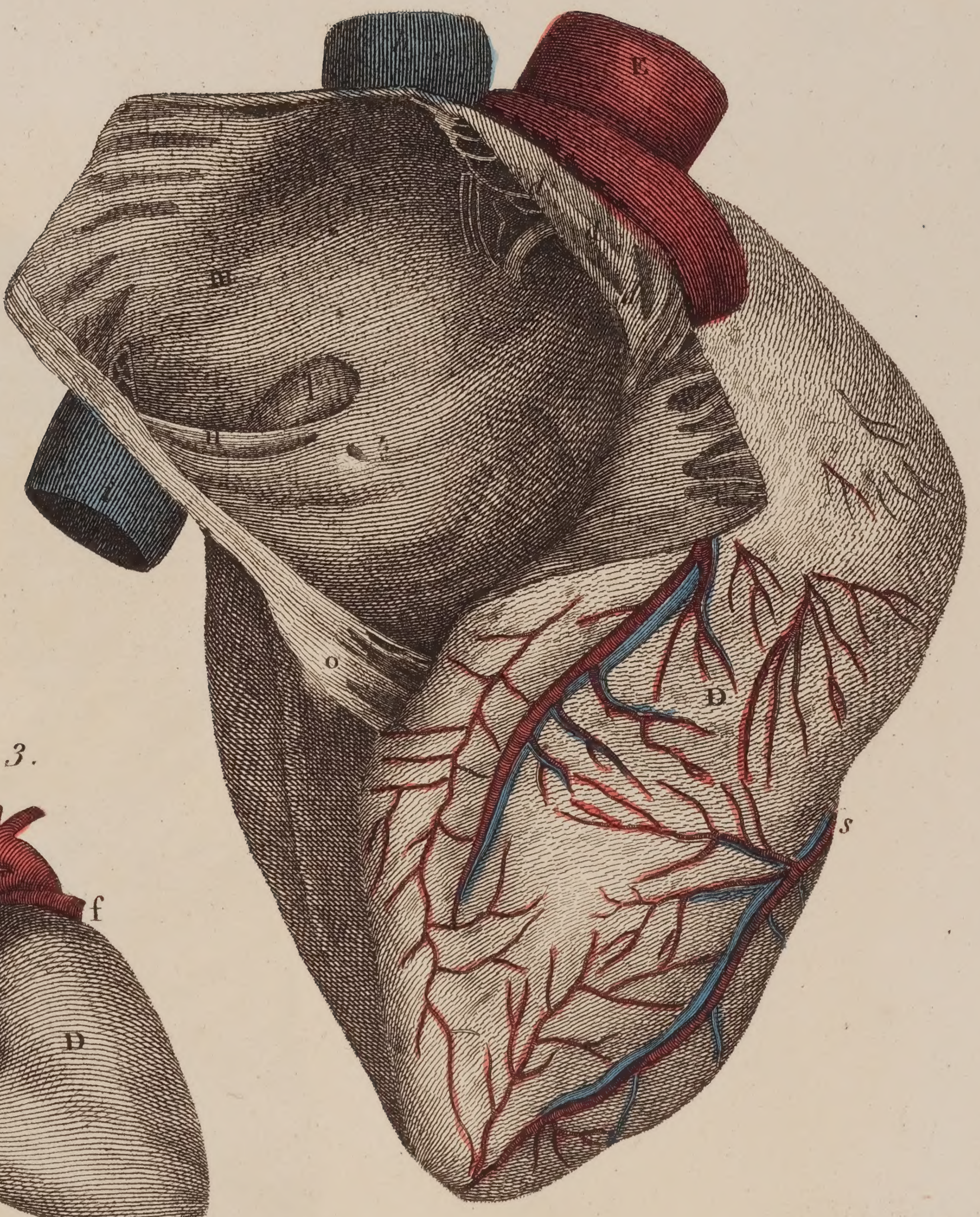

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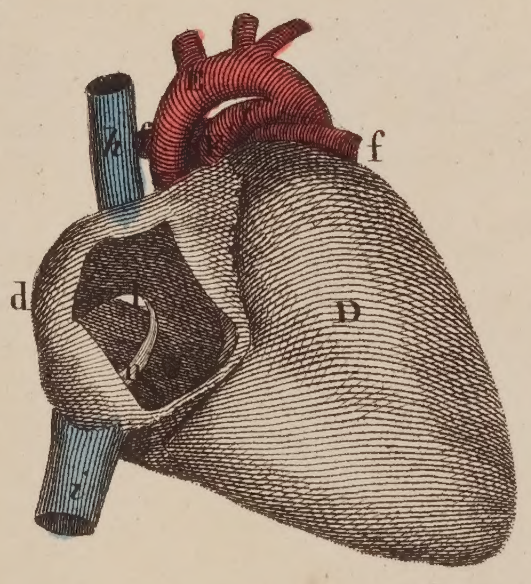


Fig. 3.

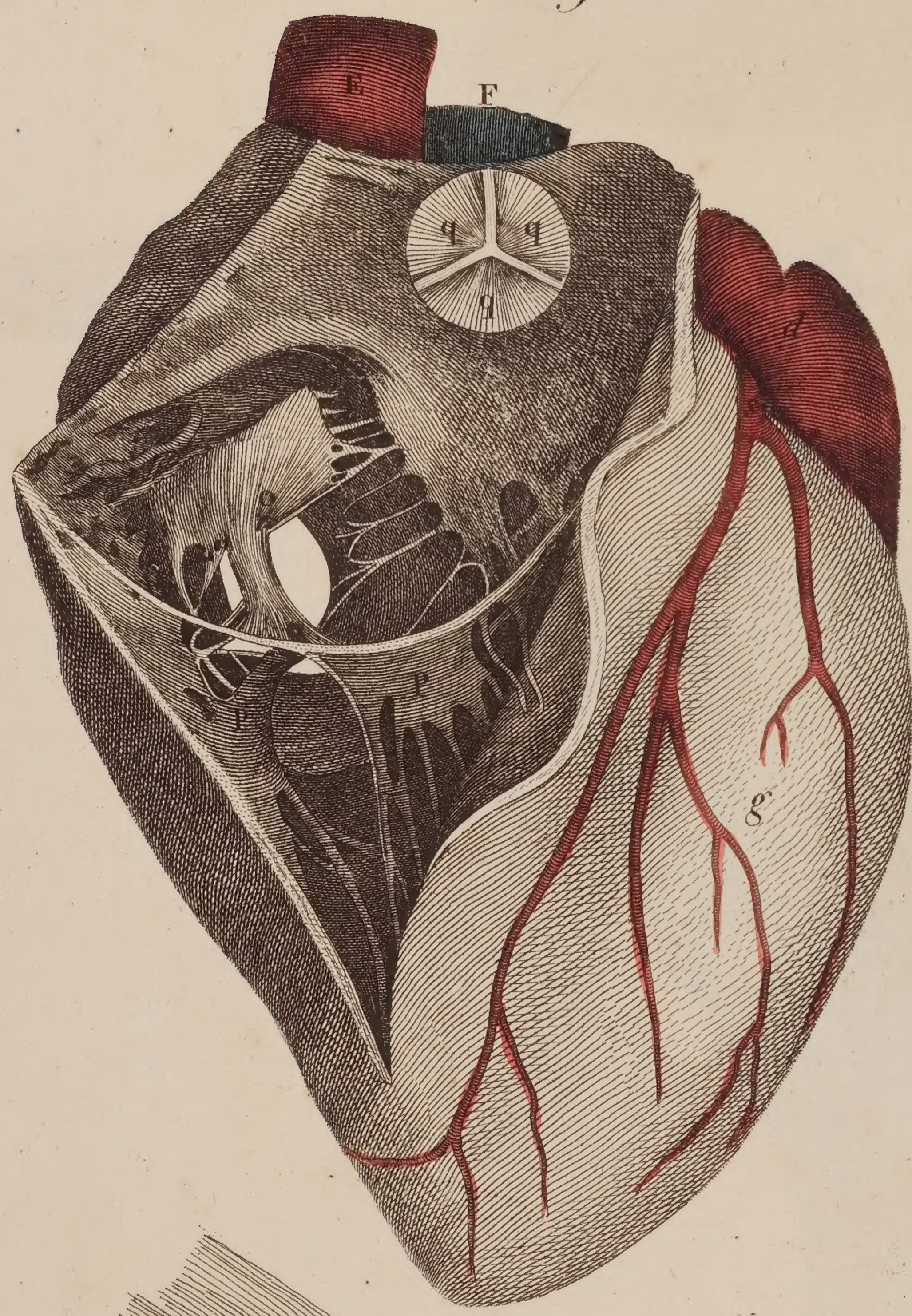
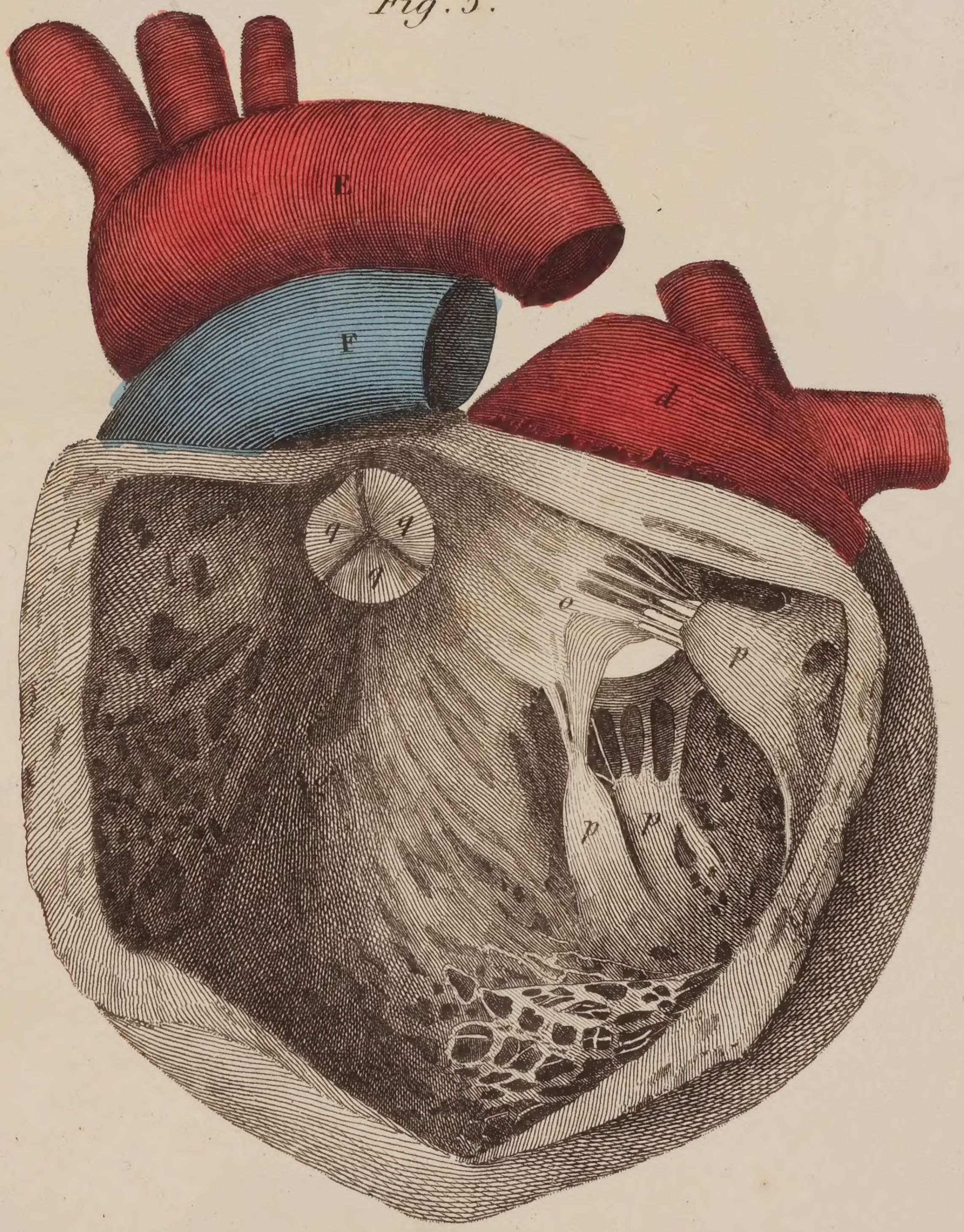


Fig. 4.



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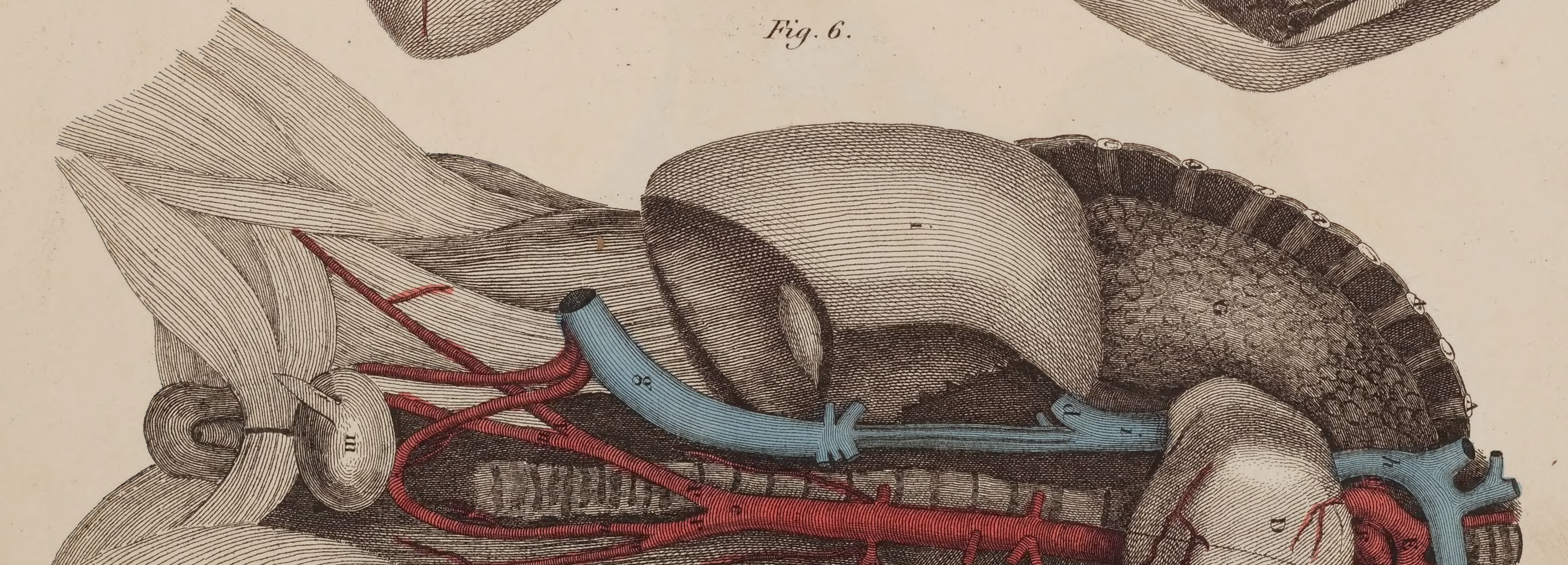

Fig. 6.

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PLATE III.

Fig. 2.

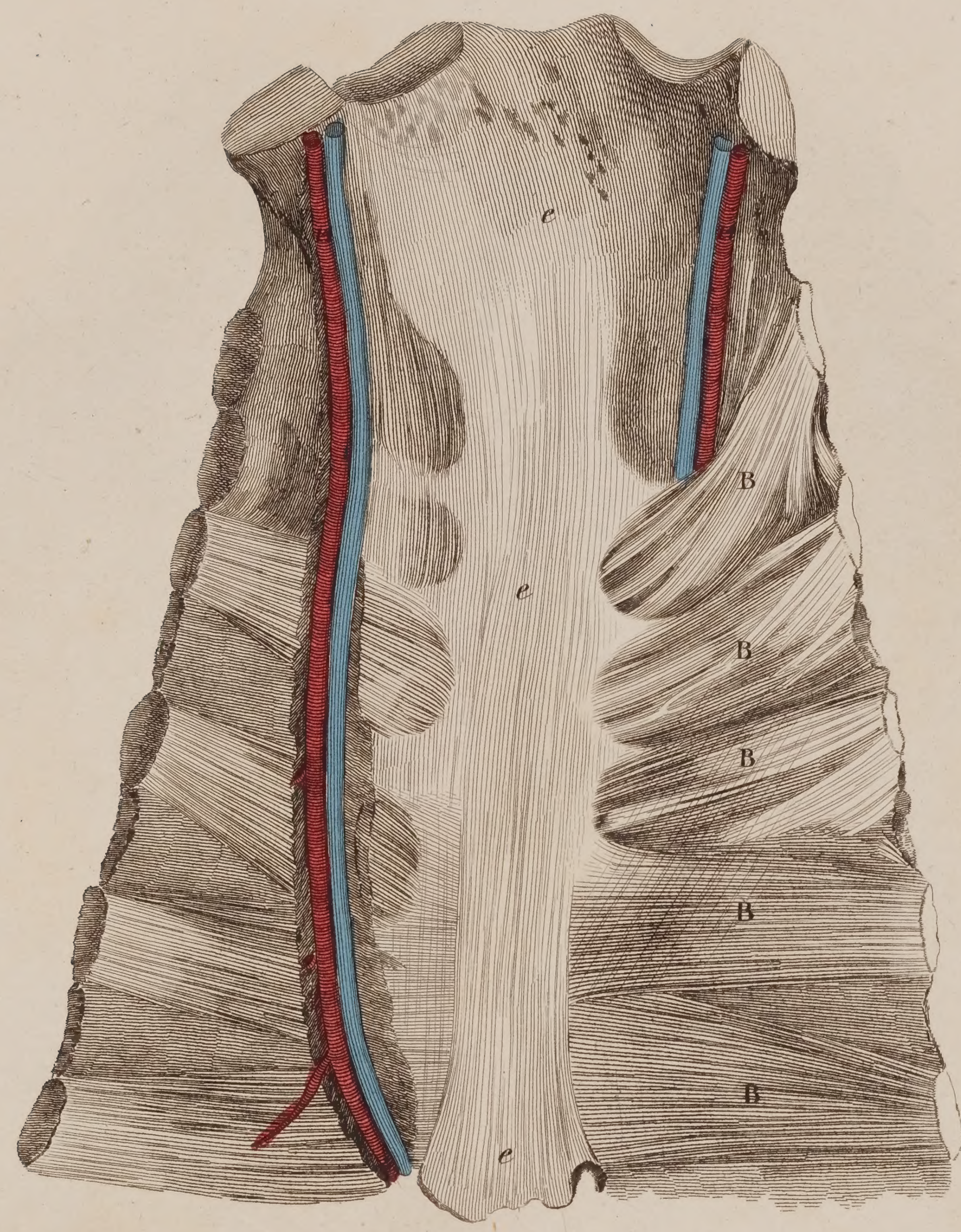

Fig. 3

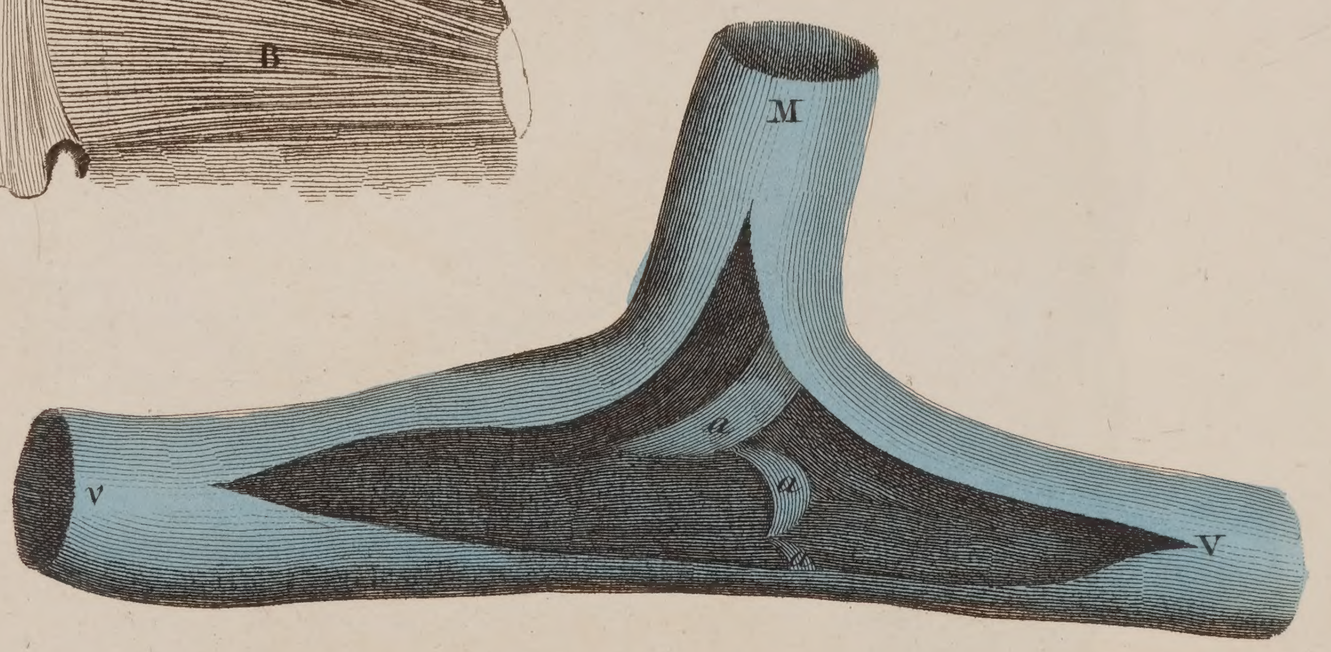

Fig. 4.

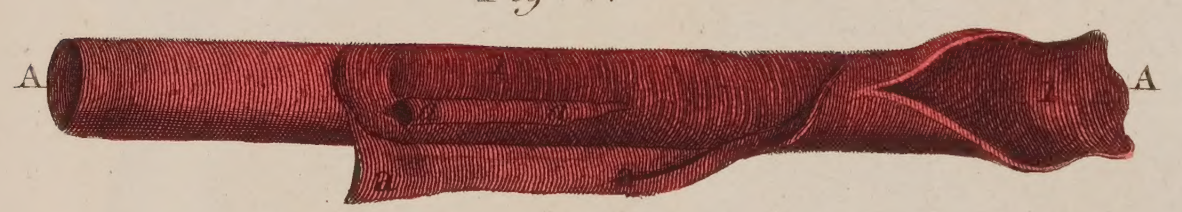

Fig. 1.

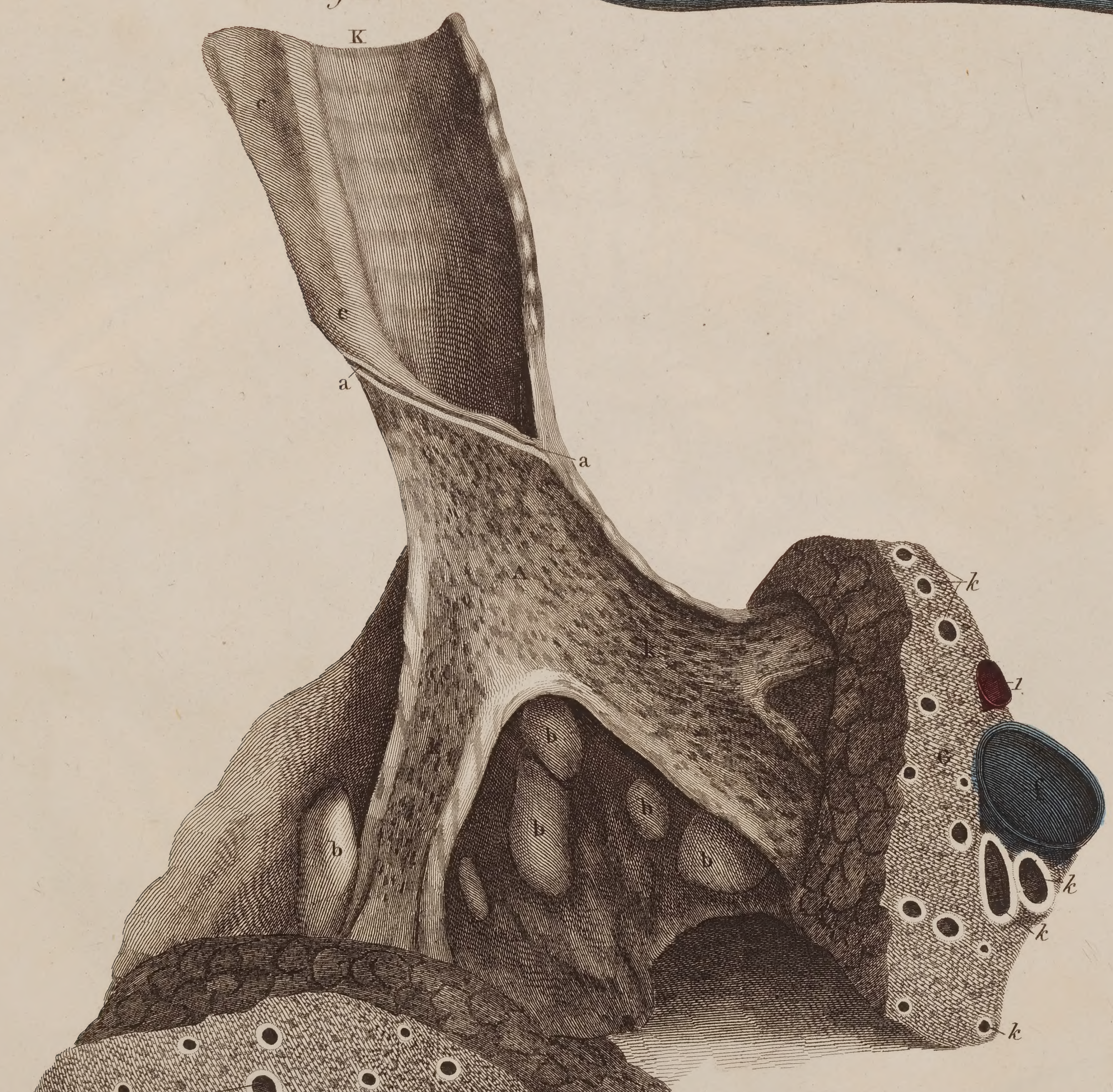
K
c
e
a
a
b
b
b
b
b
k
1
k
k
k
k
k
f
f
k
k
2

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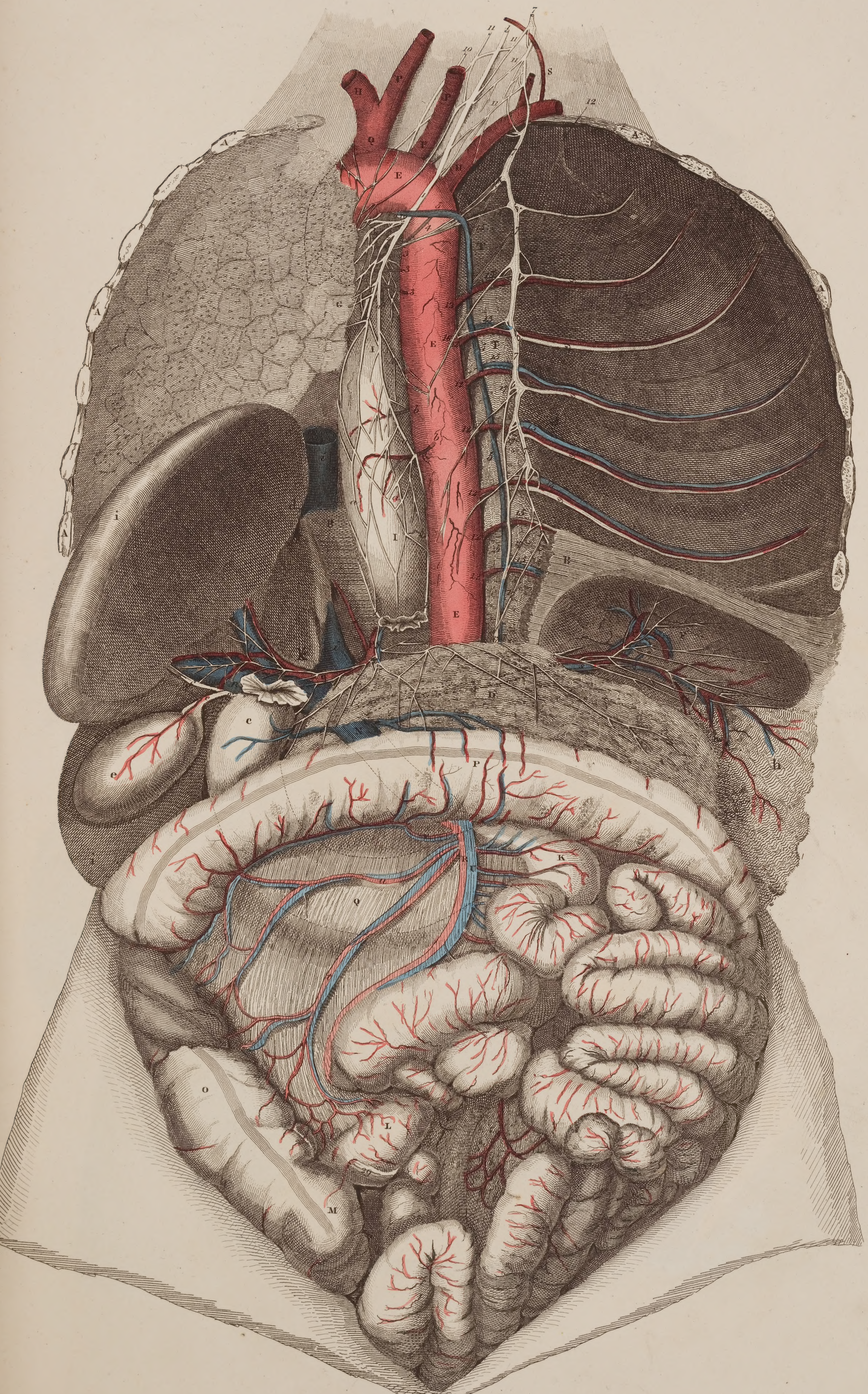
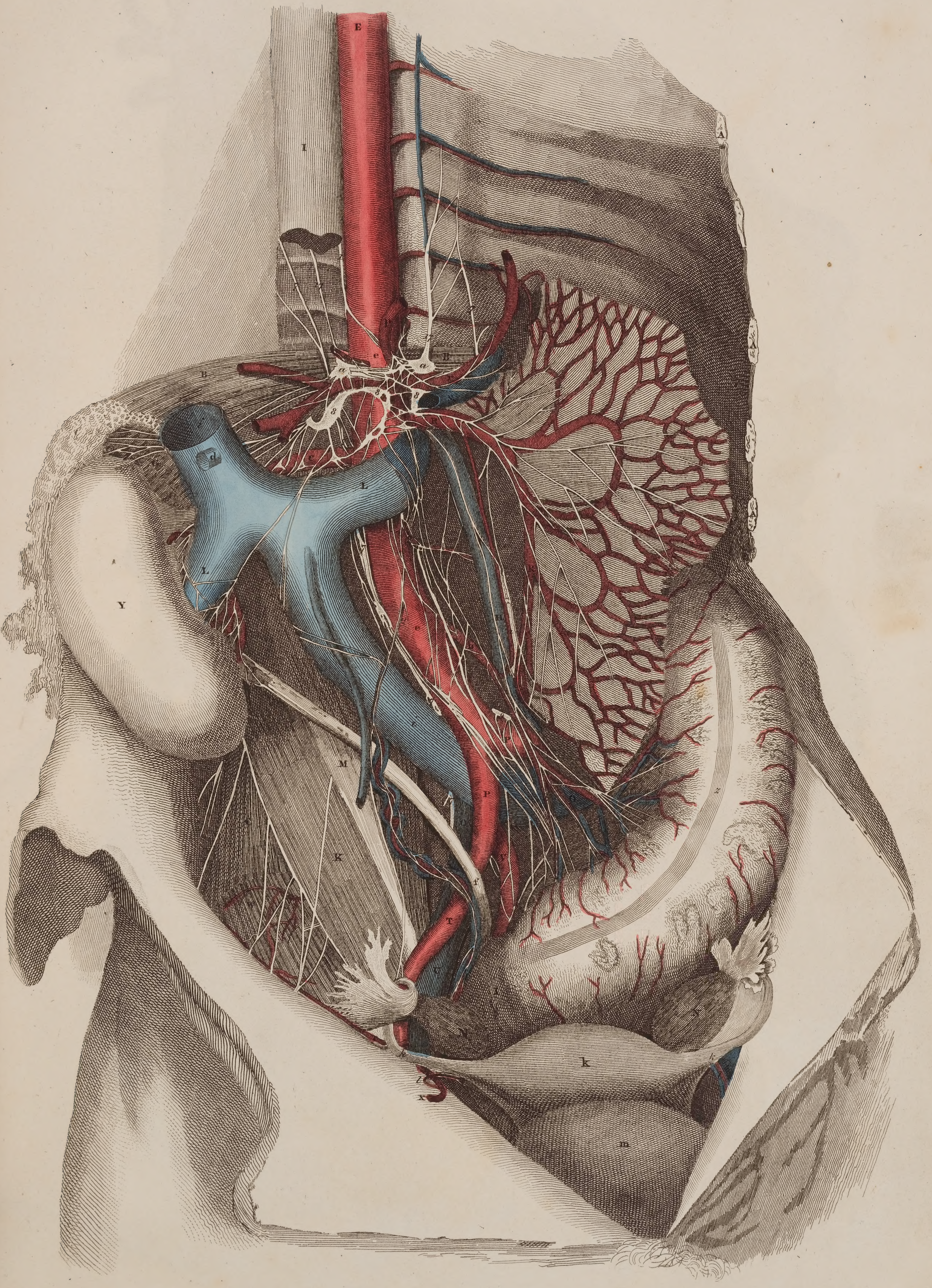
PLATE IV.


7
11
10
H
T
P
S
12
A
Q
E
G
I
i
B
E
K
c
e
D
b
P
K
Q
L
O
M

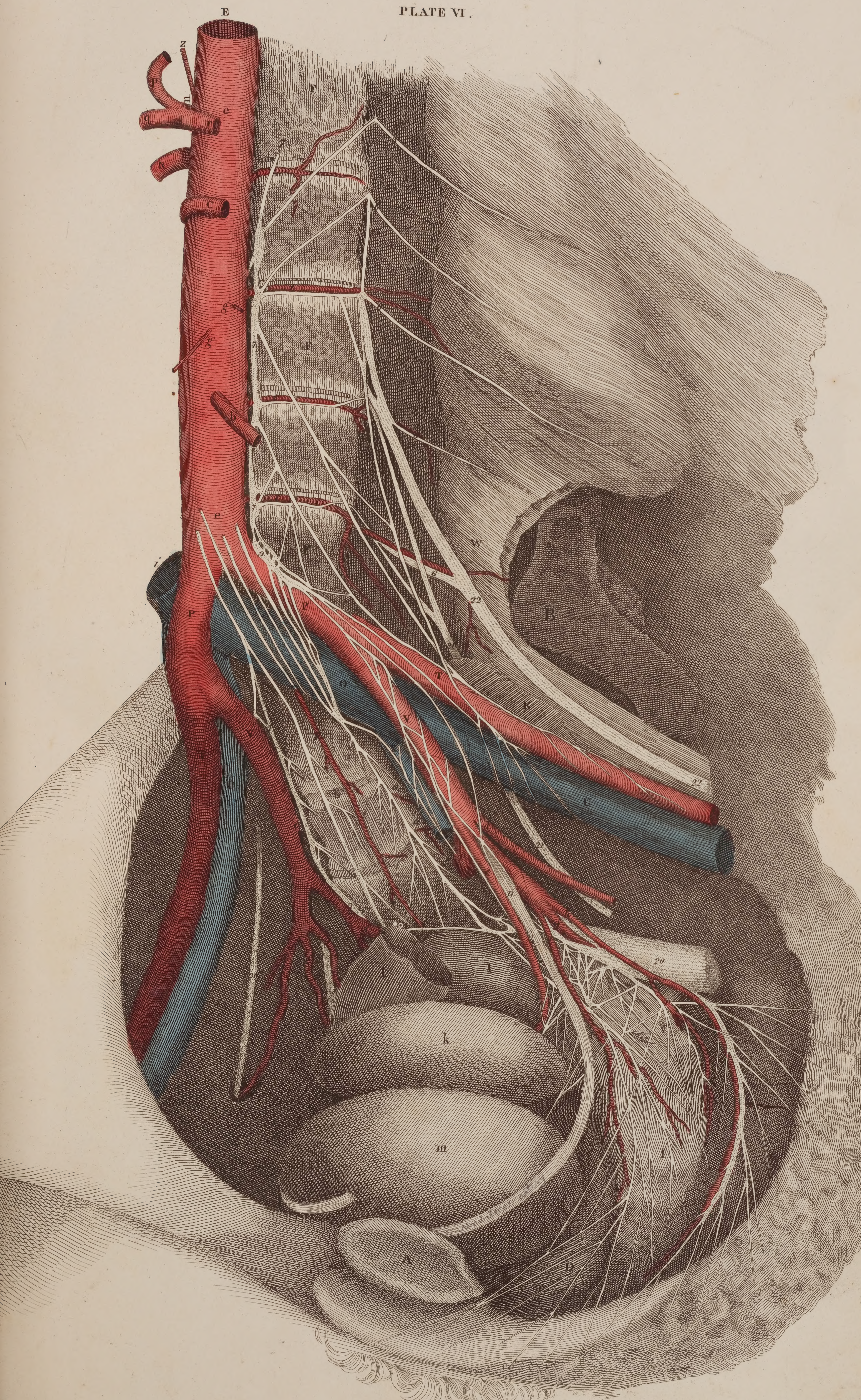
Engraved by W.H.Lizars

PLATE V.


E
I
A
A
A
B
B
e
a
a
8
8
8
C
d
L
L
Y
H
e
R
t
M
P
P
V
O
K
f
T
U
z
N
N
k
h
l
x
m

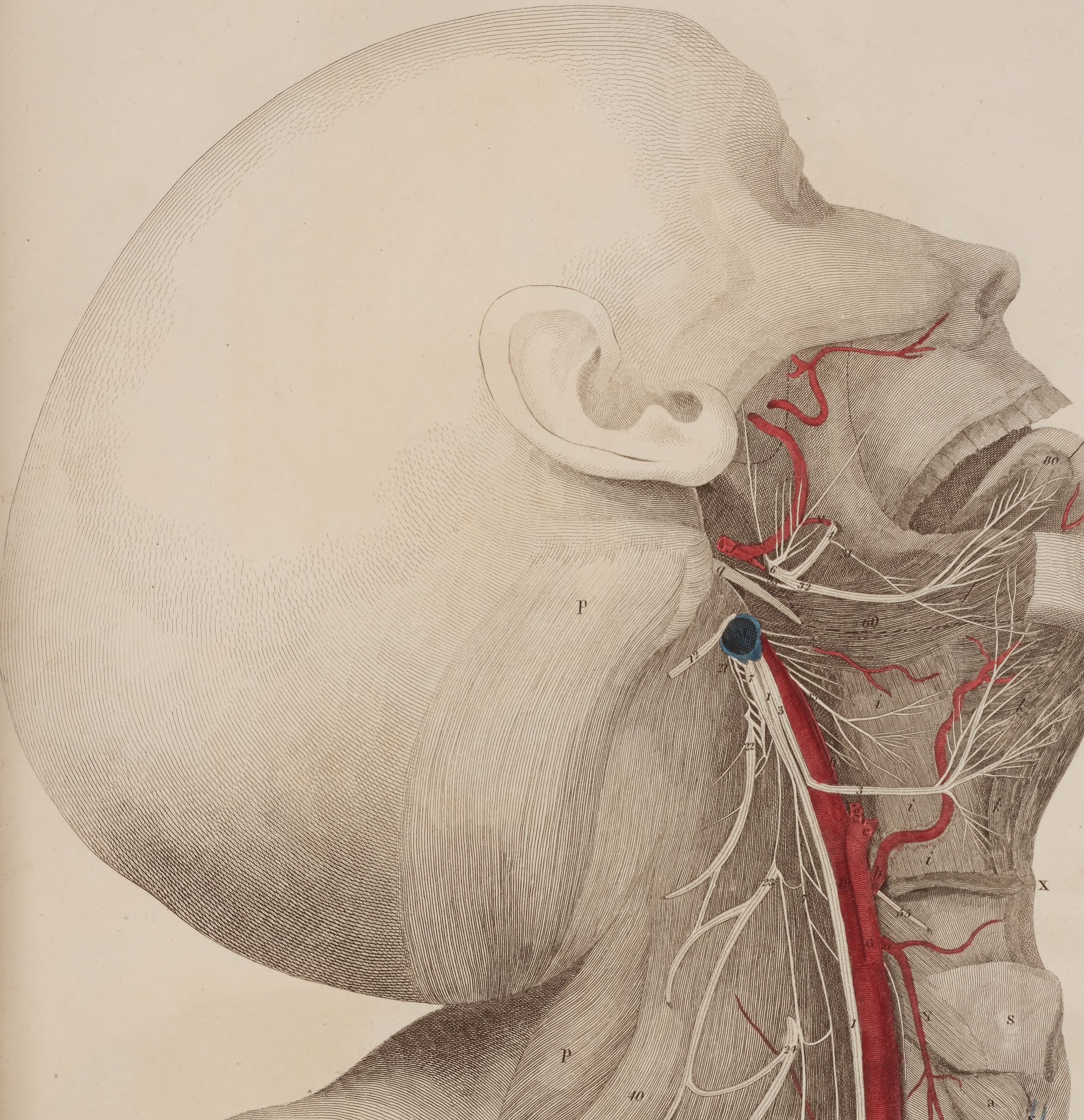
Engraved by W.H.Lizars.

PLATE VI.


E
Z
P
n
c
e
f
R
C
F
7
g
g
h
e
i
P
P
O
T
V
Y
K
W
B
22
22
U
U
20
t
l
k
m
L
A
D

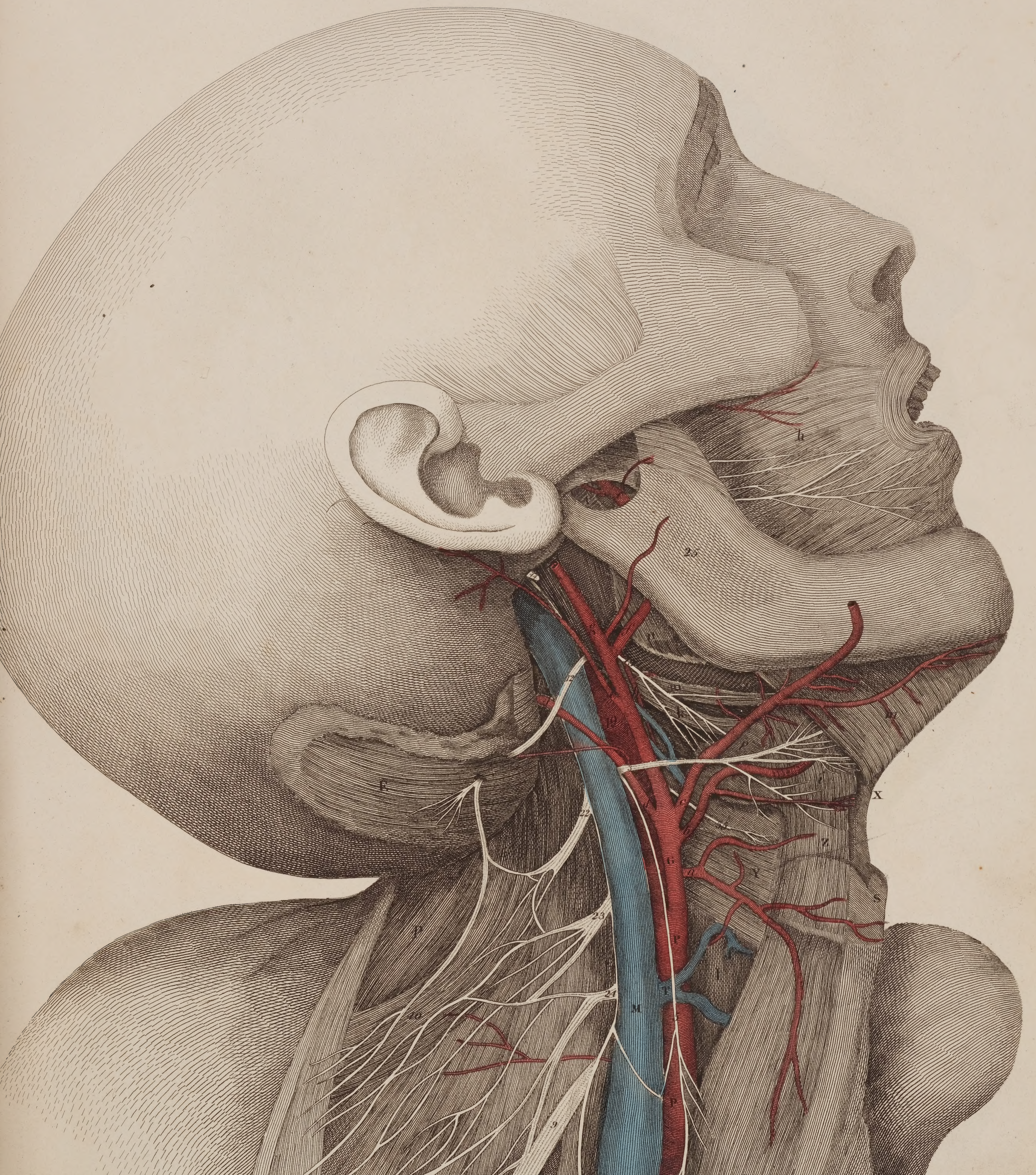
Engraved by W.H.Lizars

PLATE VII.


80
q
6
32
60
P
12
21
7
1
3
22
i
k
3
c
i
k
i
X
23
33
G
P
40
24
S
a
x
50
40
9
2
K
10
H
31
n
o
O
A

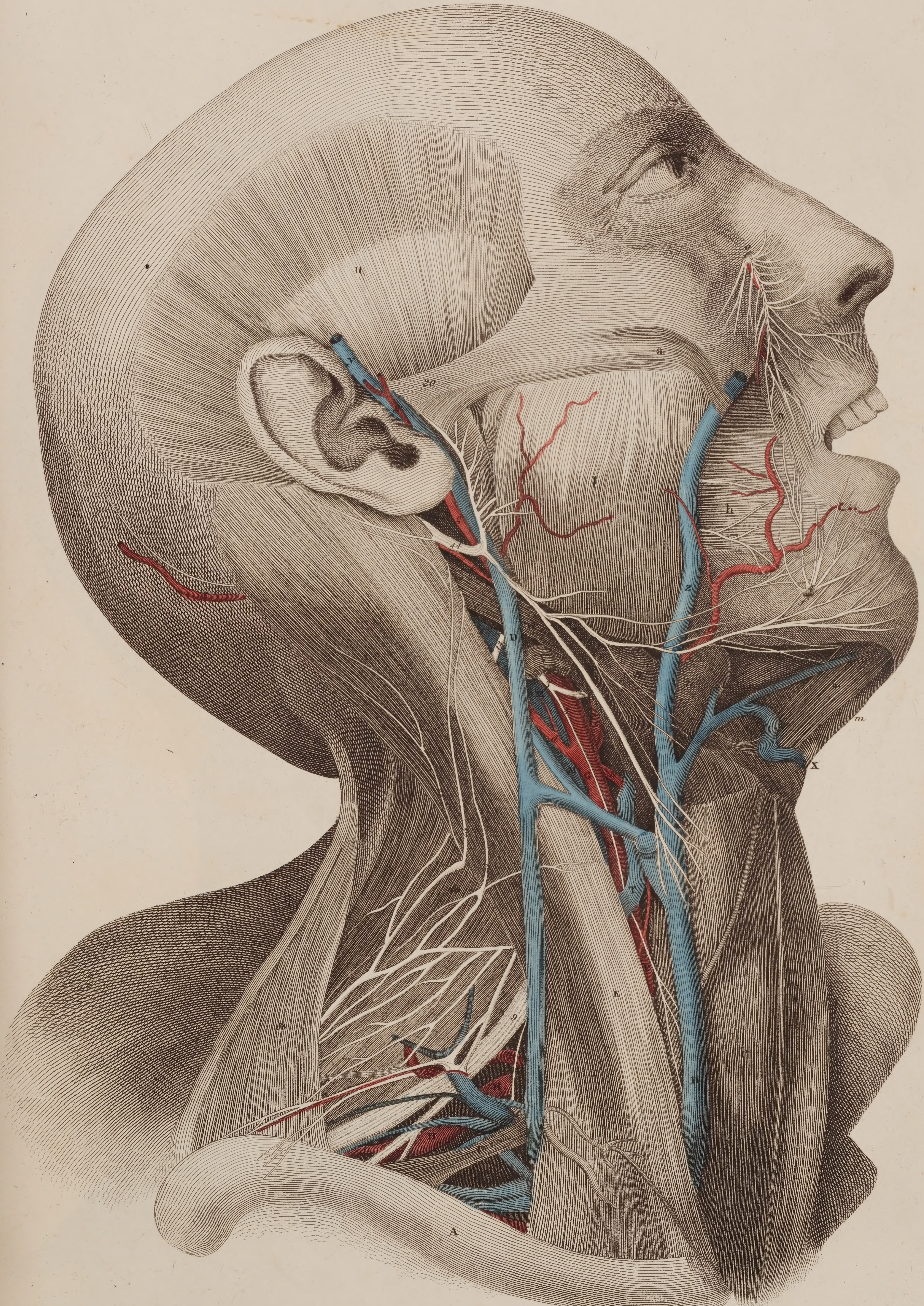
Engraved by W.H. Lizars

PLATE VIII.


h
25
14
2
3
m
k
10
8
n
X
22
Z
G
Y
S
E
P
1
23
T
M
24
5
40
P
9
B
40
22
80
L
H
64
u
D
A

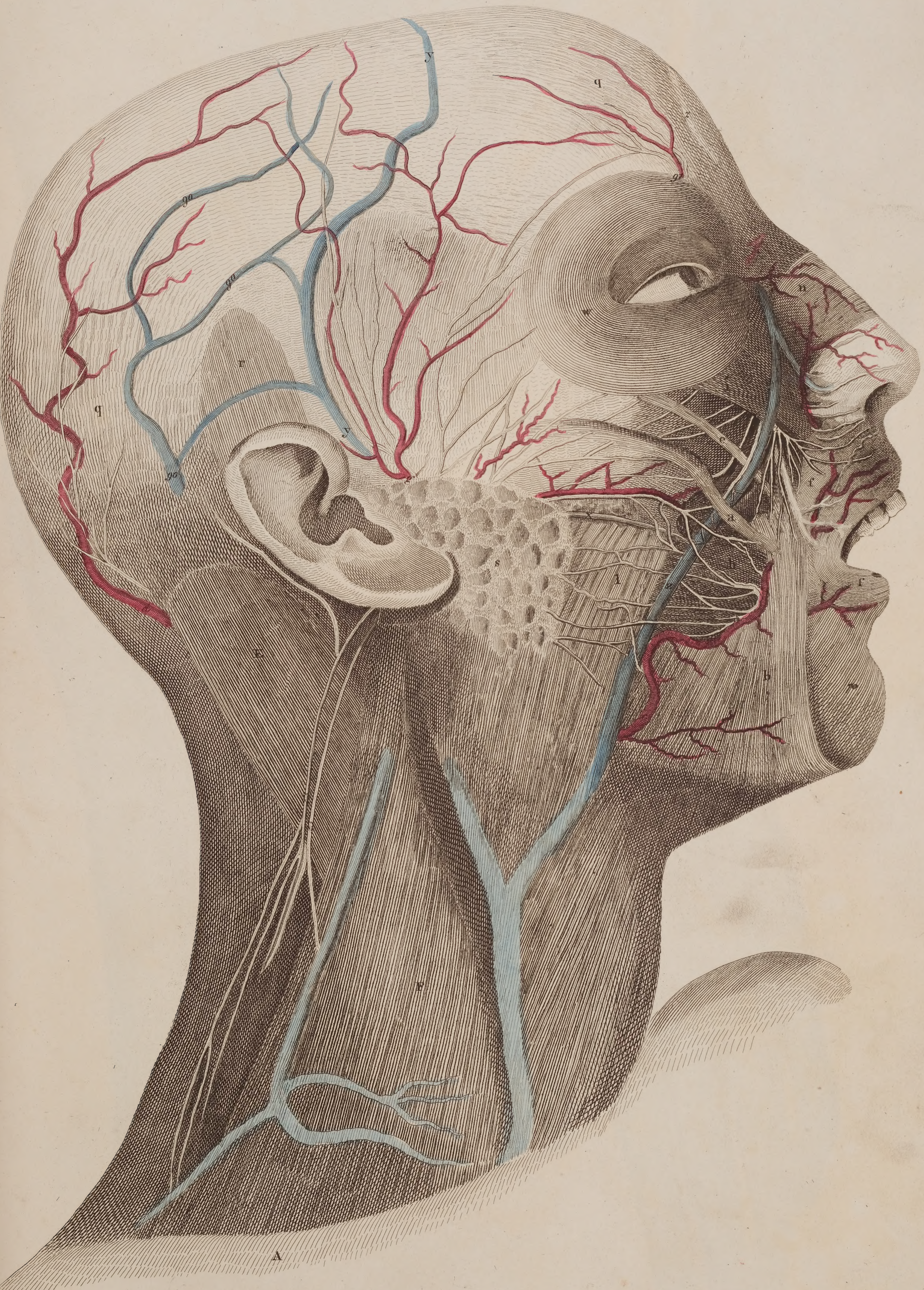
Engraved by W H Lizars

PLATE IX.


u
y
20
a
l
h
z
44
D
V
M
X
m
T
U
E
9
H
C
D
A

Engraved by W.H. Lizars

PLATE X.


y
q
z
g
ga
ga
r
q
w
n
i
e
y
ga
g
x
s
i
a
f
h
f
b
m
d
E
F
A

Engd. by W. H. Lizars

PLATE XI.

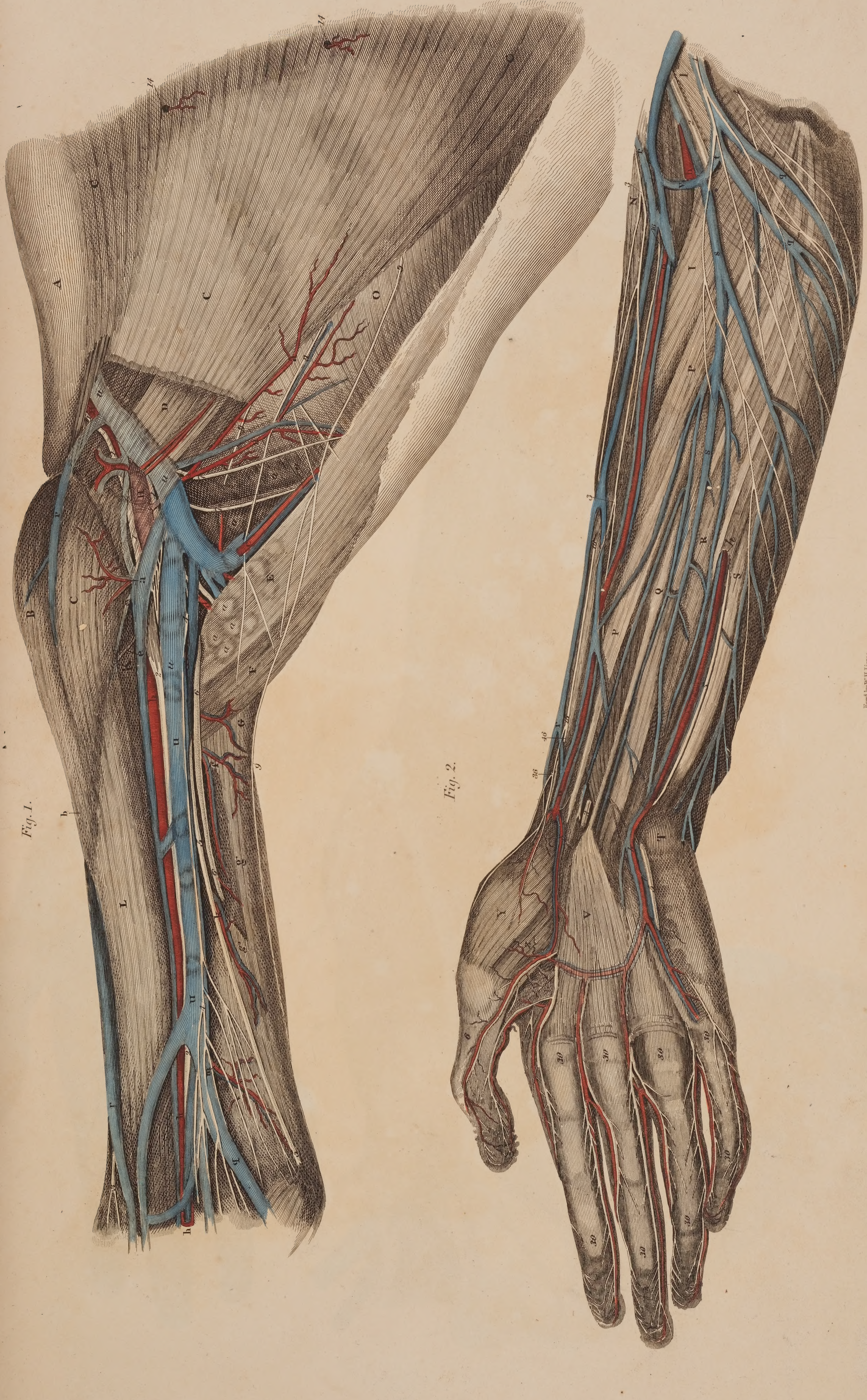

A
B
C
D
E
F
G
L
O
14
14
N
I
P
Q
R
S
T
V
Y
30

Fig. 1.

Fig. 2.

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PLATE XII.

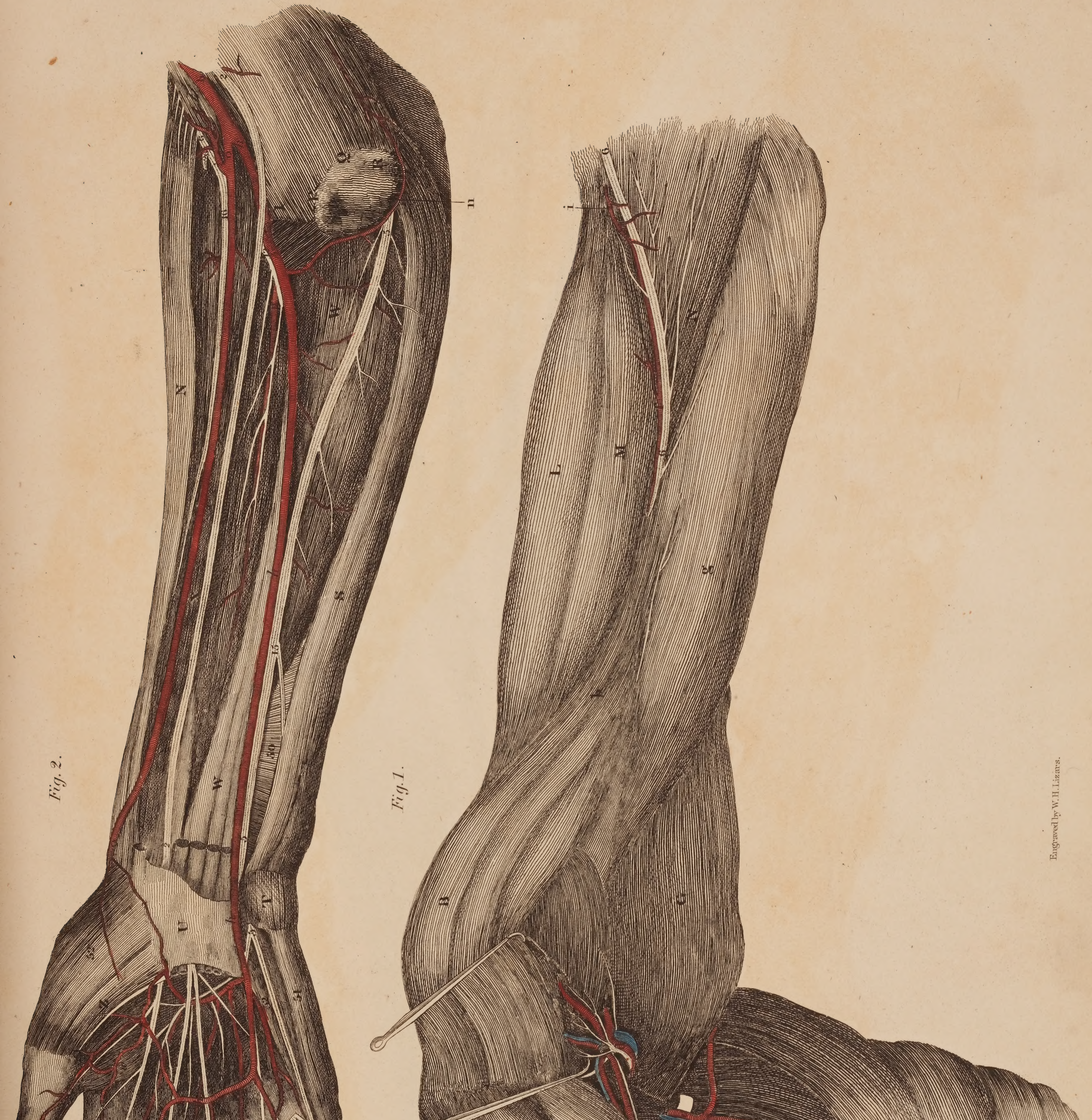
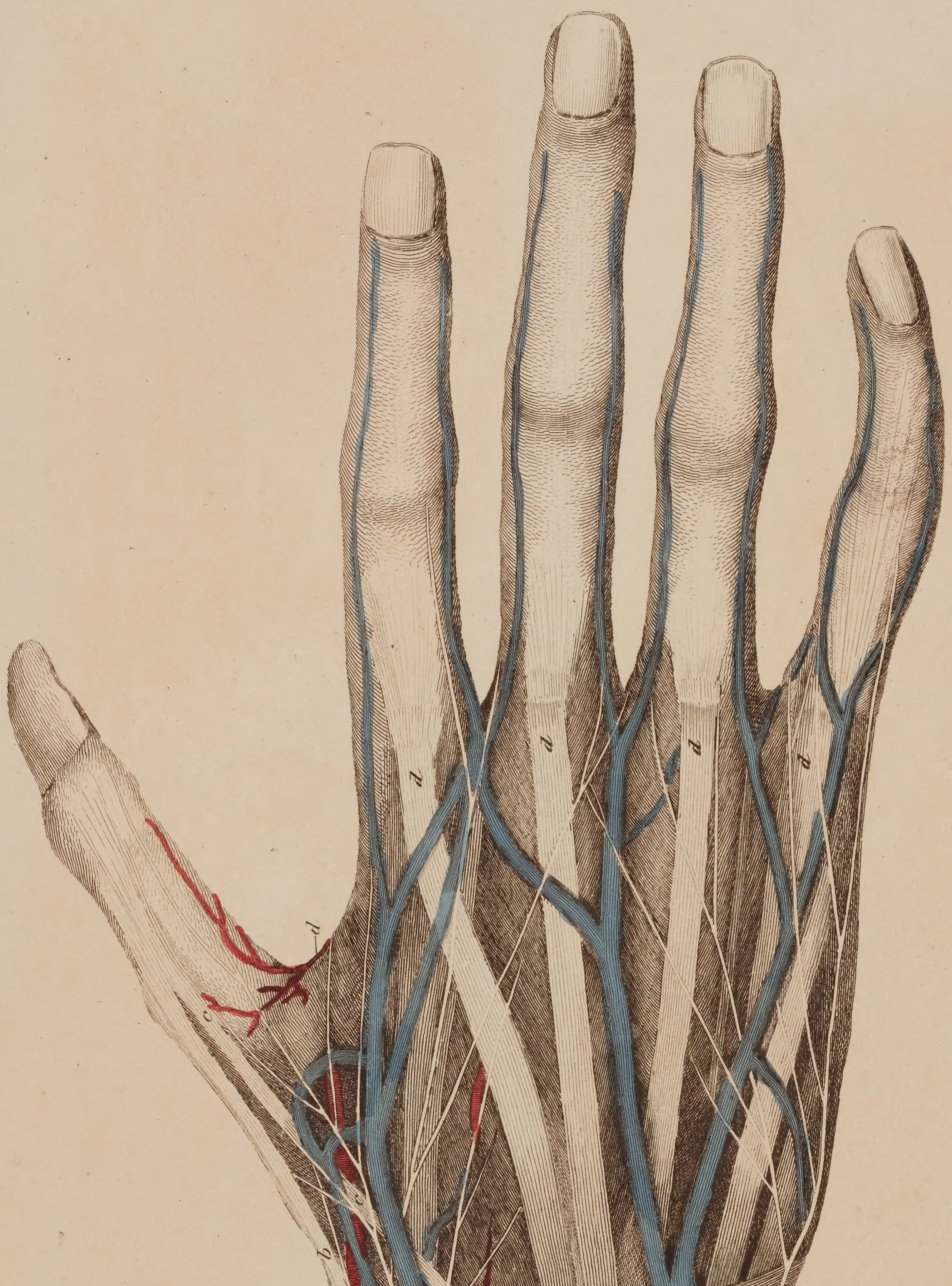

n
i
N
S
W
T
U
L
M
K
B
G
D
A
E
F
H

Fig. 2.

Fig. 1.

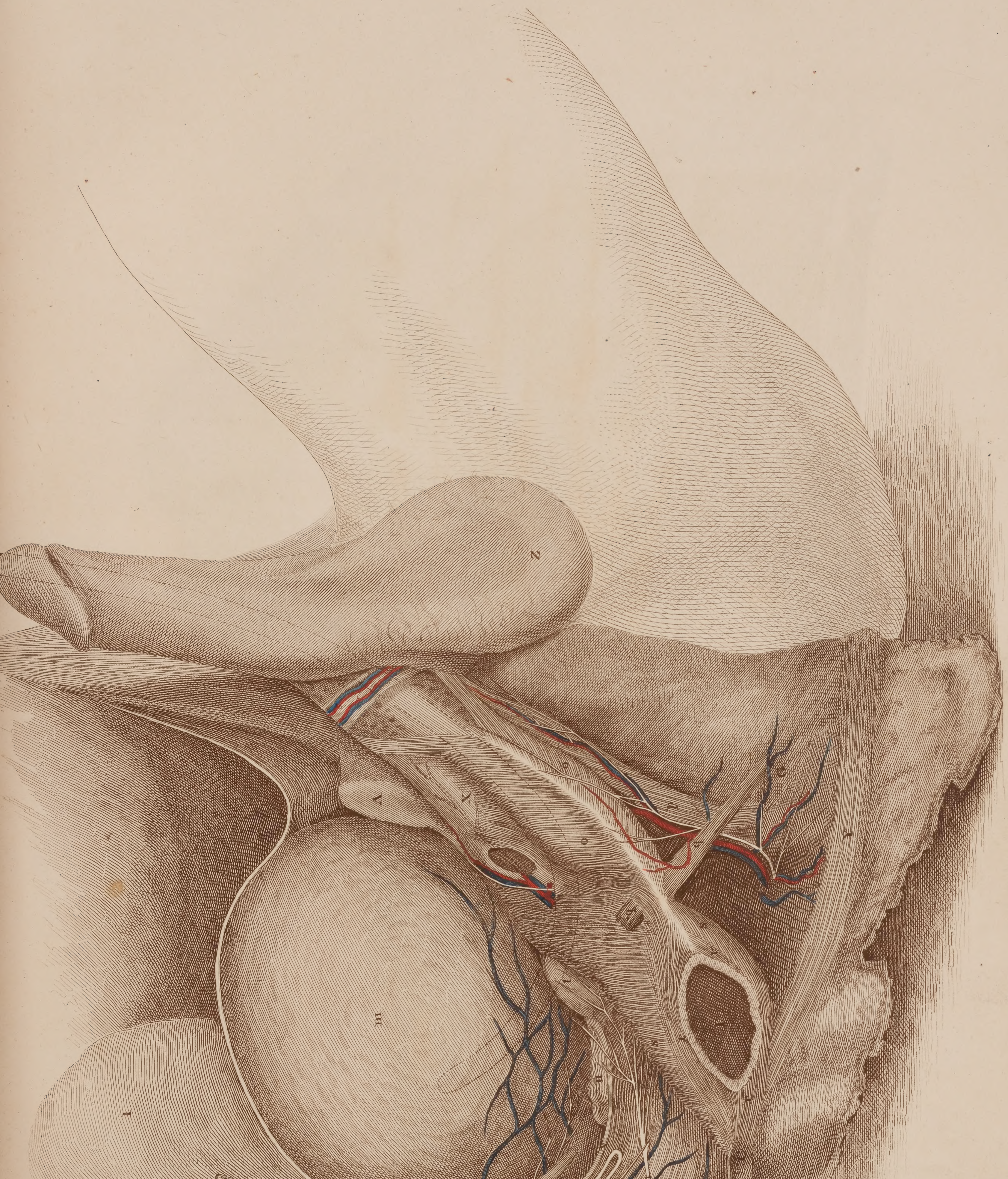
Engraved by W. H. Lizars.

PLATE XIII.


d
d
d
d
d
c
b
a
o
U
U
46
36
15
I
I
B
D

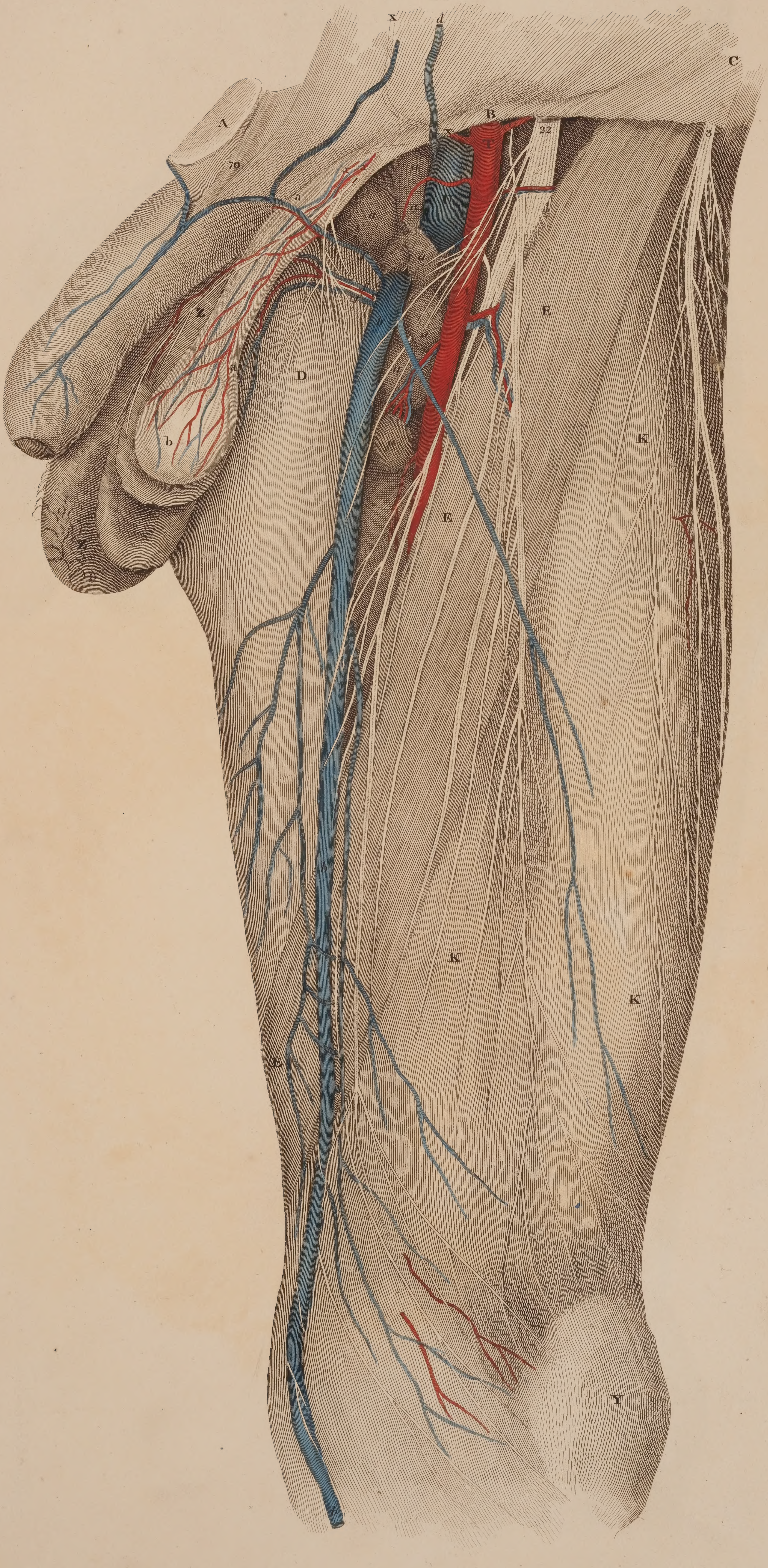
Engraved by W. H. Lizars

PLATE XIV.



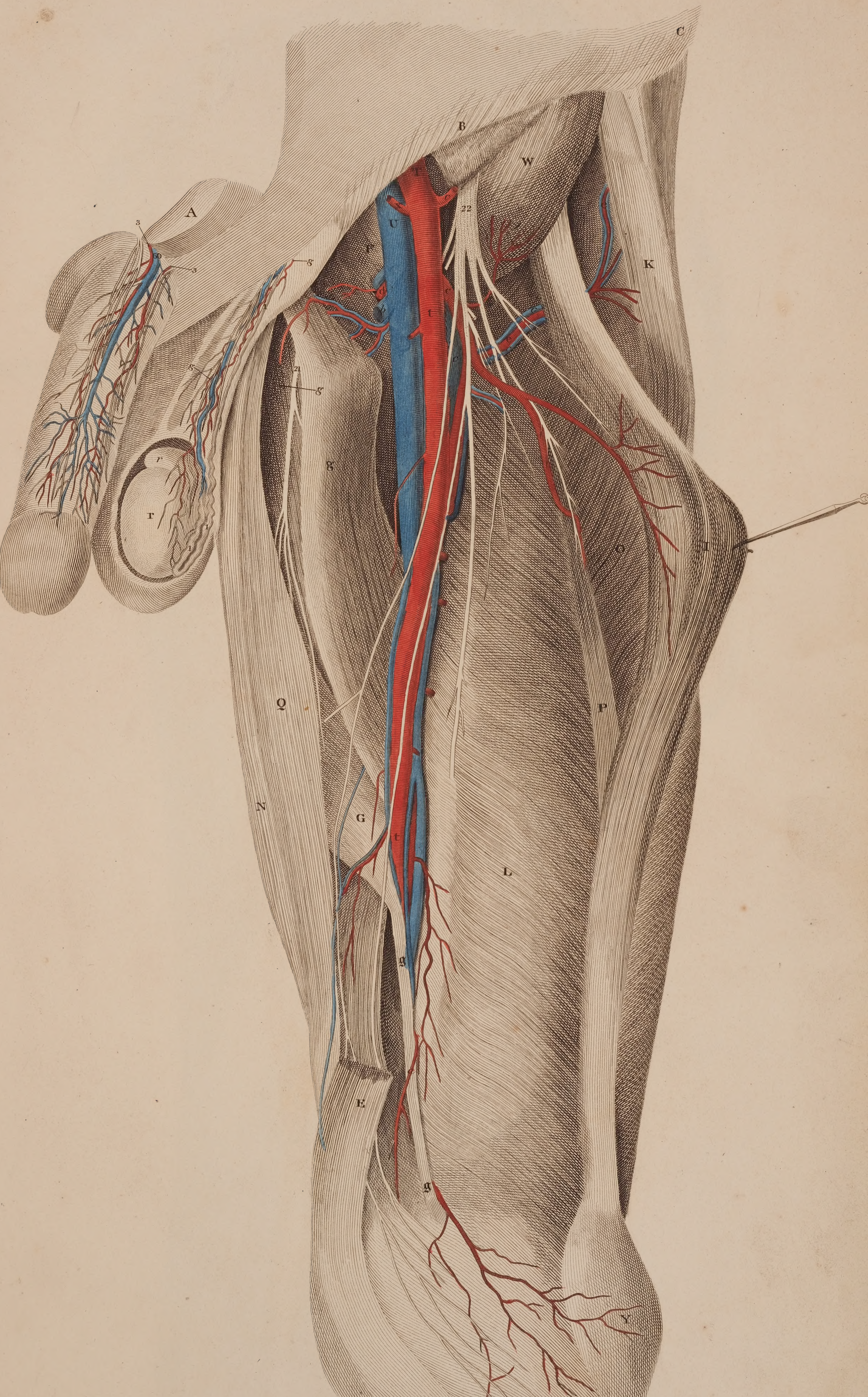
Engraved by W. H. Lizars

PLATE XV.


x
d
C
A
B
X
T
22
3
70
a
U
a
a
Z
E
a
D
b
b
K
E
Z
b
K
K
Æ
Y
b

Eng^{d} by W.H. Lizars

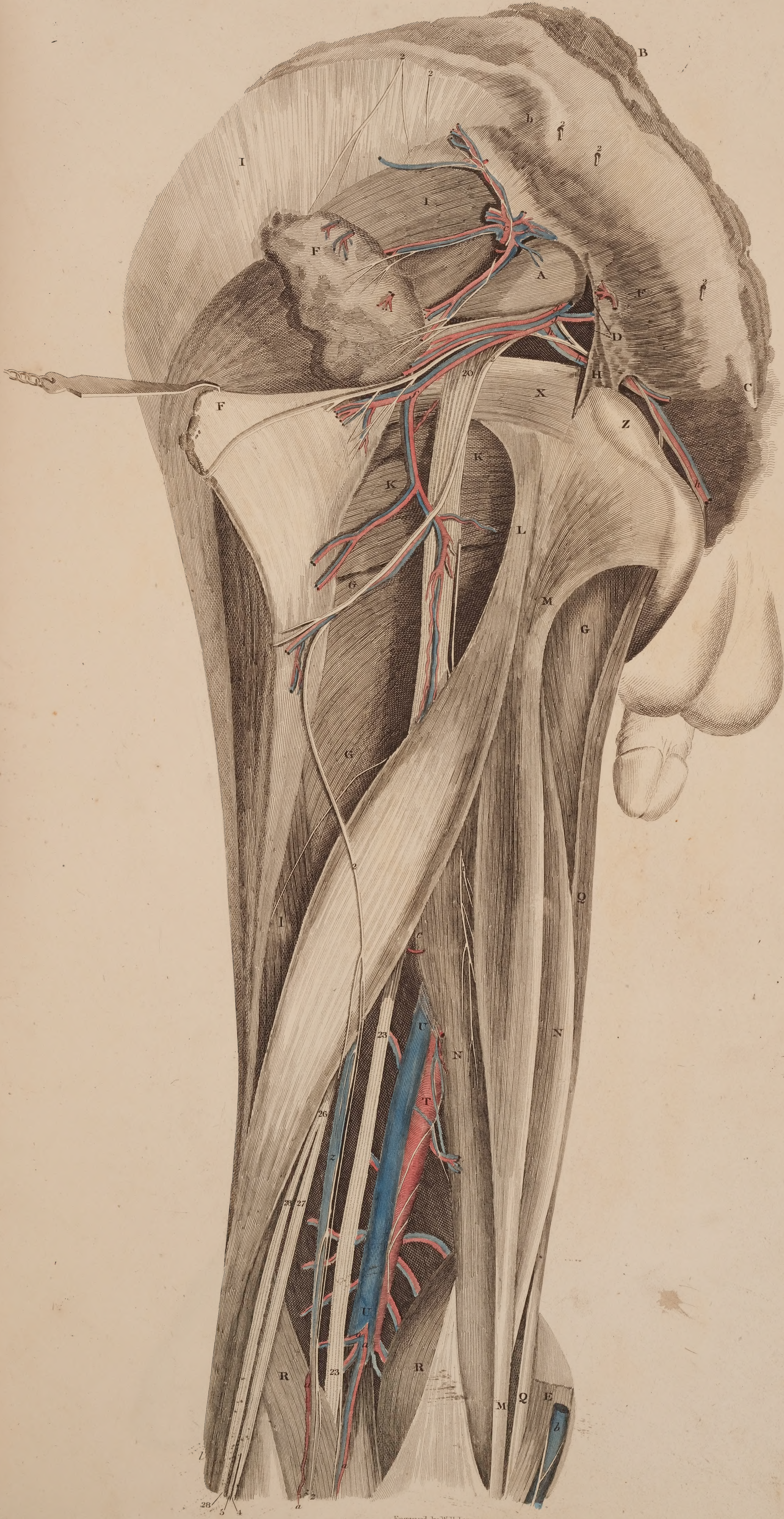
PLATE XVI.



C
B
W
A
T
U
22
3
20
3
8
F
K
t
8
21
g
r
r
1
1
O
I
Q
P
N
G
t
L
g
E
g
Y

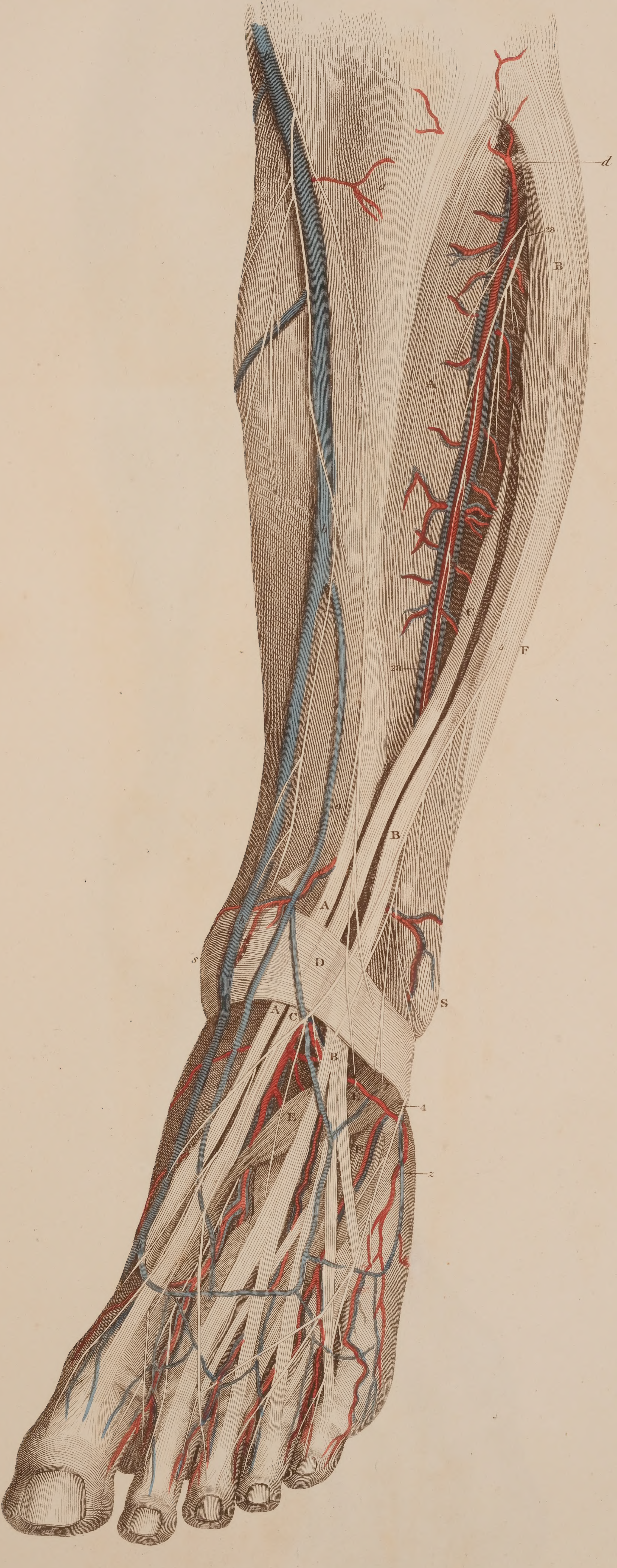
Engraved by W.H. Lizars

PLATE XVII.


B
2
2
b
2
2
I
1
F
A
2
D
H
C
F
20
X
Z
K
K
b
L
6
M
G
G
Q
2
l
c
U
23
N
N
T
26
z
28 27
U
R
23
R
M
Q
E
b
l
28
5
4
a
2
2

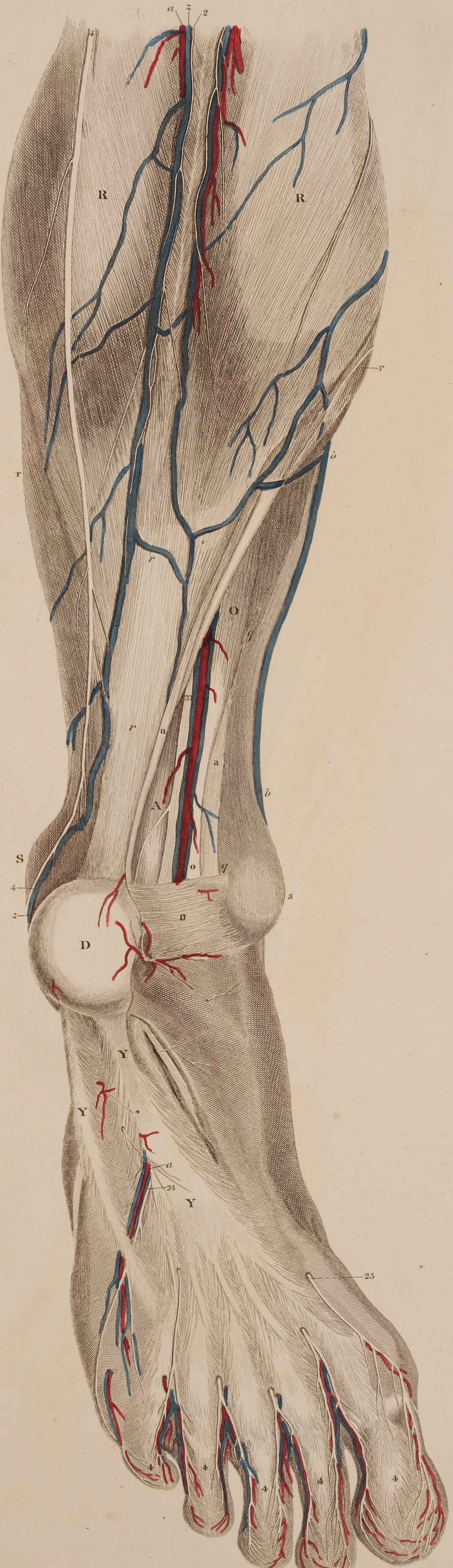
Engraved by W.H. Lizars

PLATE XVIII.



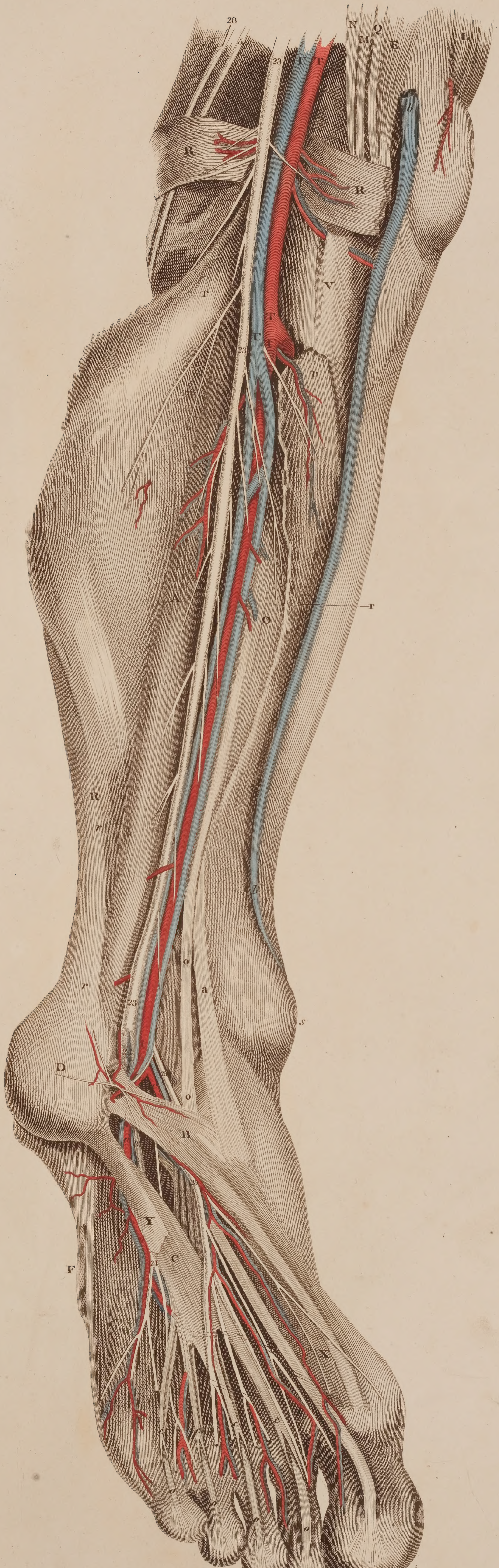
b
a
d
28
B
A
b
C
5
F
28
a
c
B
A
b
s
D
S
A
C
B
E
E
4
E
z

Engraved by W. H. Lizars


a
z
2
R
R
r
r
b
r
O
q
23
r
u
a
b
A
S
4
z
o
q
s
u
D
Y
Y
a
24
Y
25
4
4
4
4
4

Engraved by W.H. Lizars

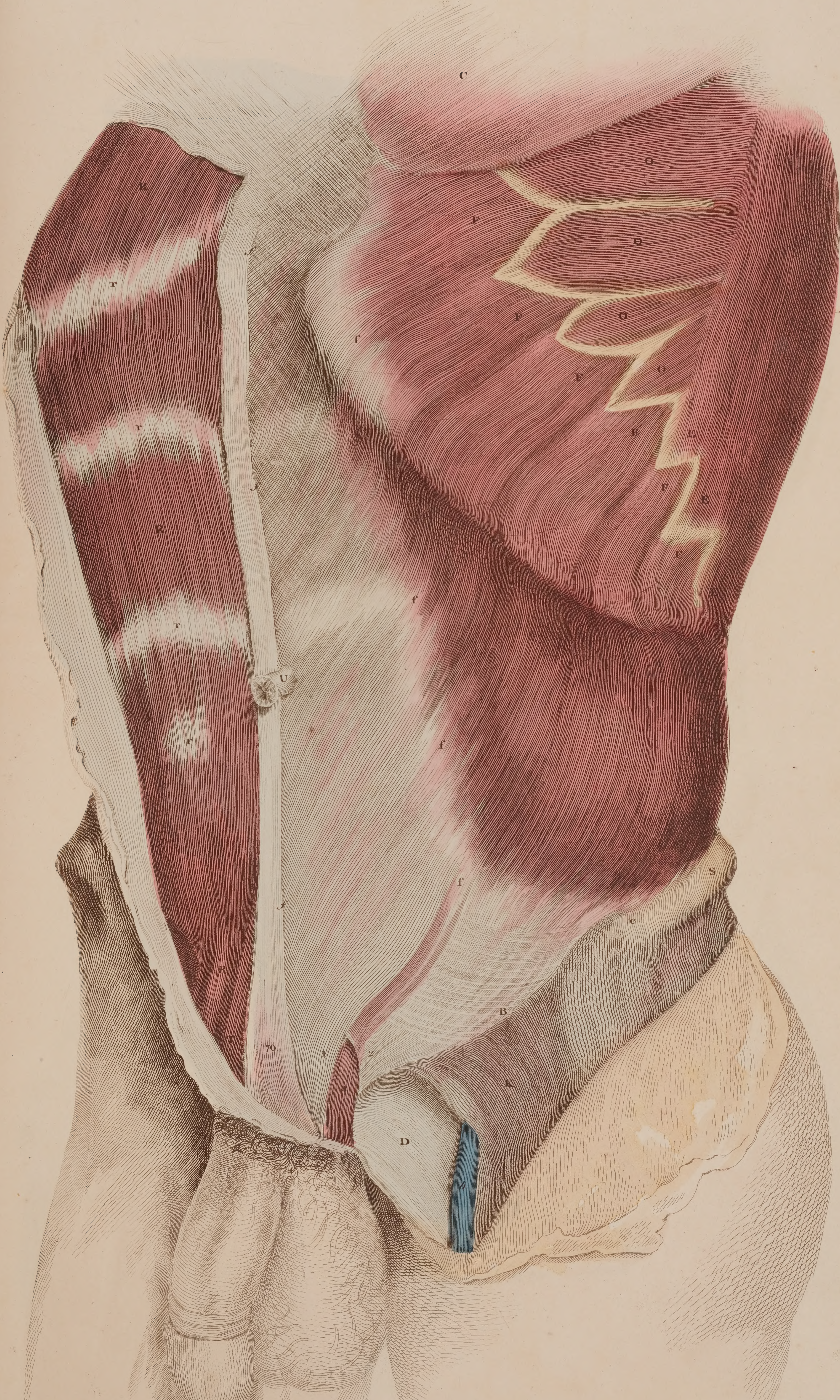
PLATE XX.



28
5
23
U
T
N
Q
M
E
L
R
b
R
r
V
T
U
23
r
A
O
r
R
r
o
a
r
23
s
24
D
o
B
Y
F
C
24
X

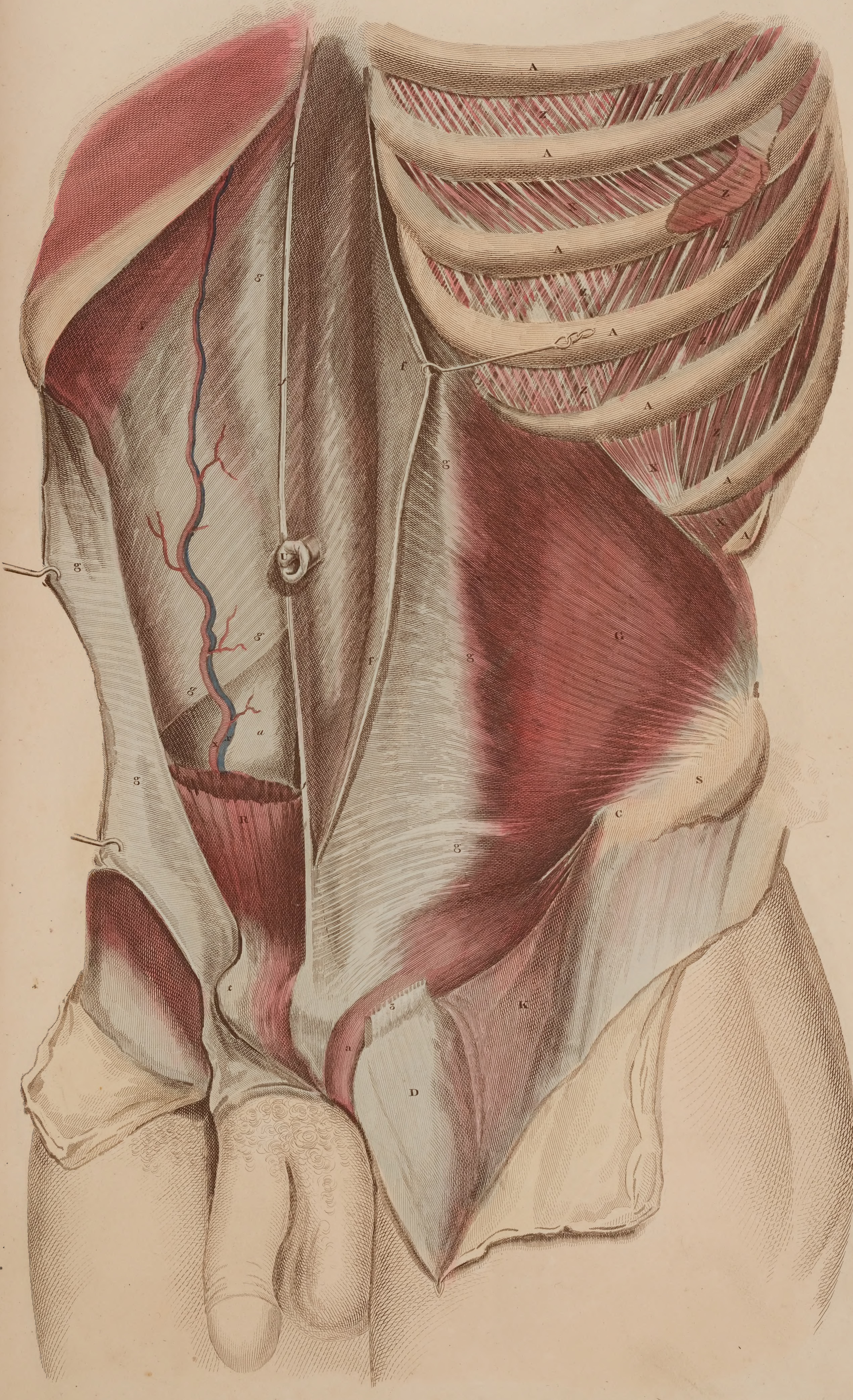
Engraved by W. H. Lizars

PLATE I.


C
O
R
F
O
f
r
F
O
f
F
O
r
f
F
E
R
E
F
f
r
U
f
r
f
S
c
f
R
B
T
70
1
2
a
K
D
b

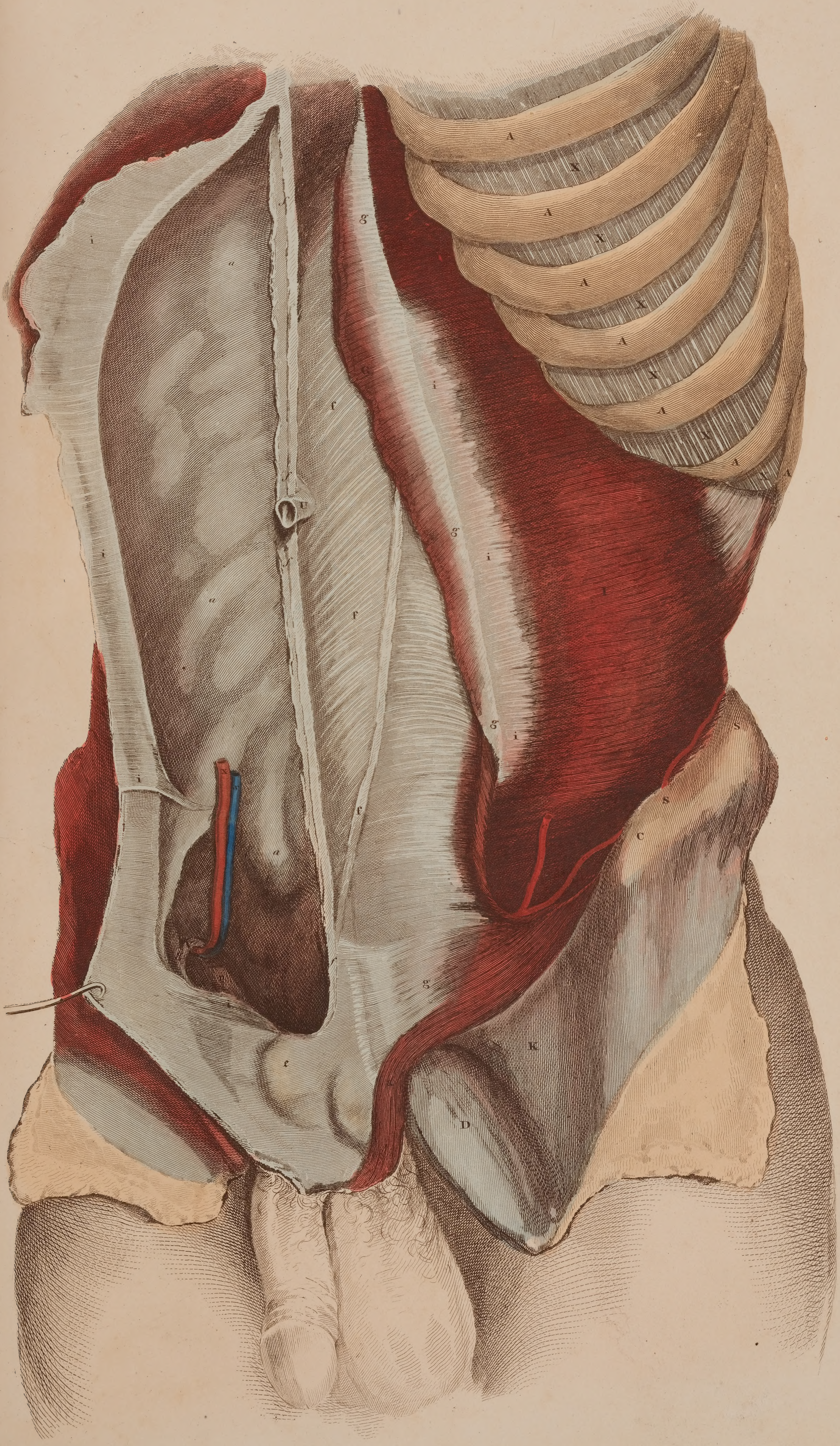
Eng$^{d.}$ by W.H. Lizars

PLATE II.


A
Z
Z
A
Z
A
Z
A
Z
A
f
Z
A
g
Z
X
A
X
A
g
g
U
f
G
f
g
g
g
a
x x
S
g
R
c
g
c
3
K
a
D

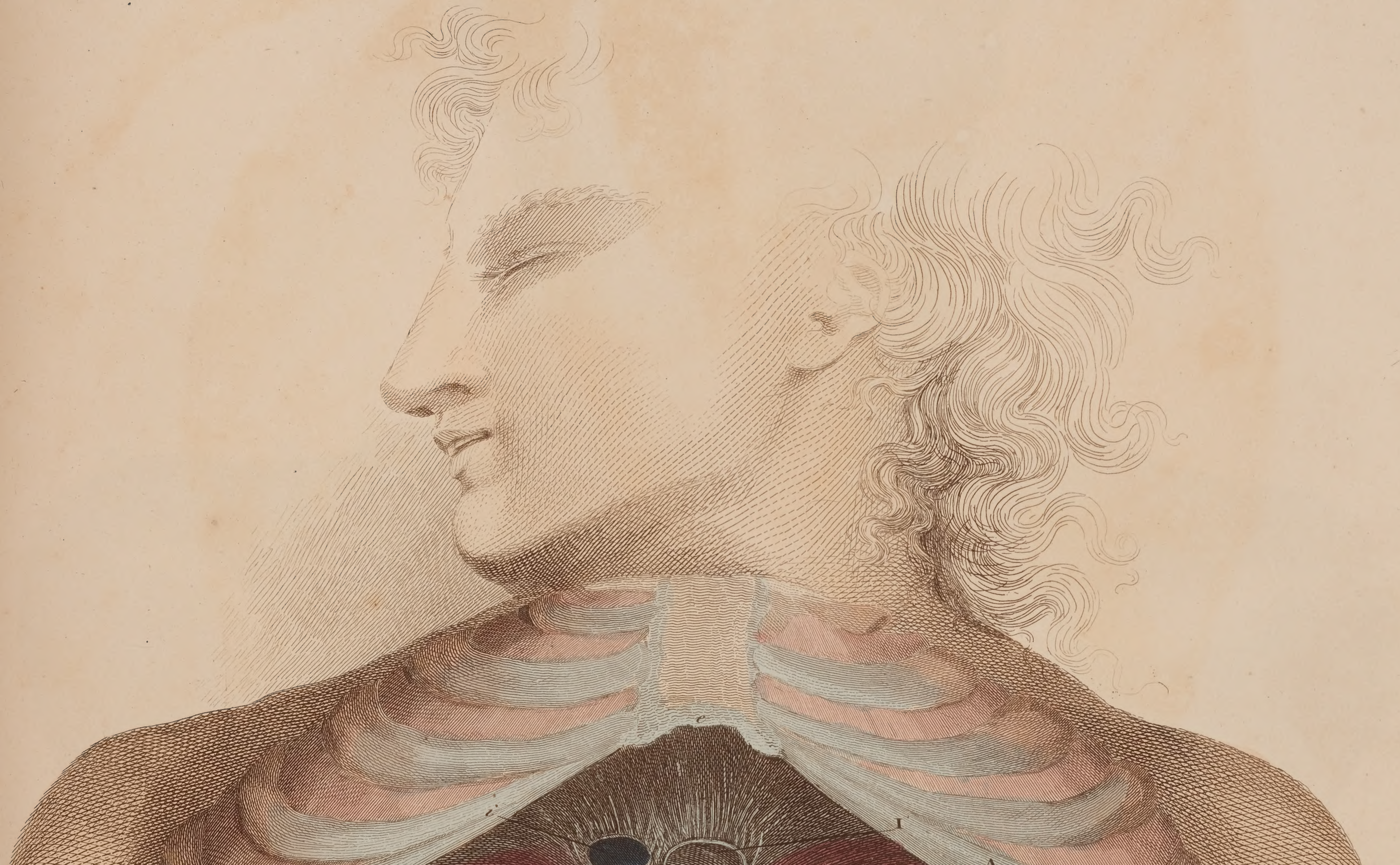
Engd by W. H. Lizars

PLATE III.


A
X
A
X
A
X
A
X
A
X
A
X
A
g
i
a
f
G
i
f
E
g
i
a
f
I
g
i
S
s
C
f
g
K
t
D

Engd. by W.H.Lizars

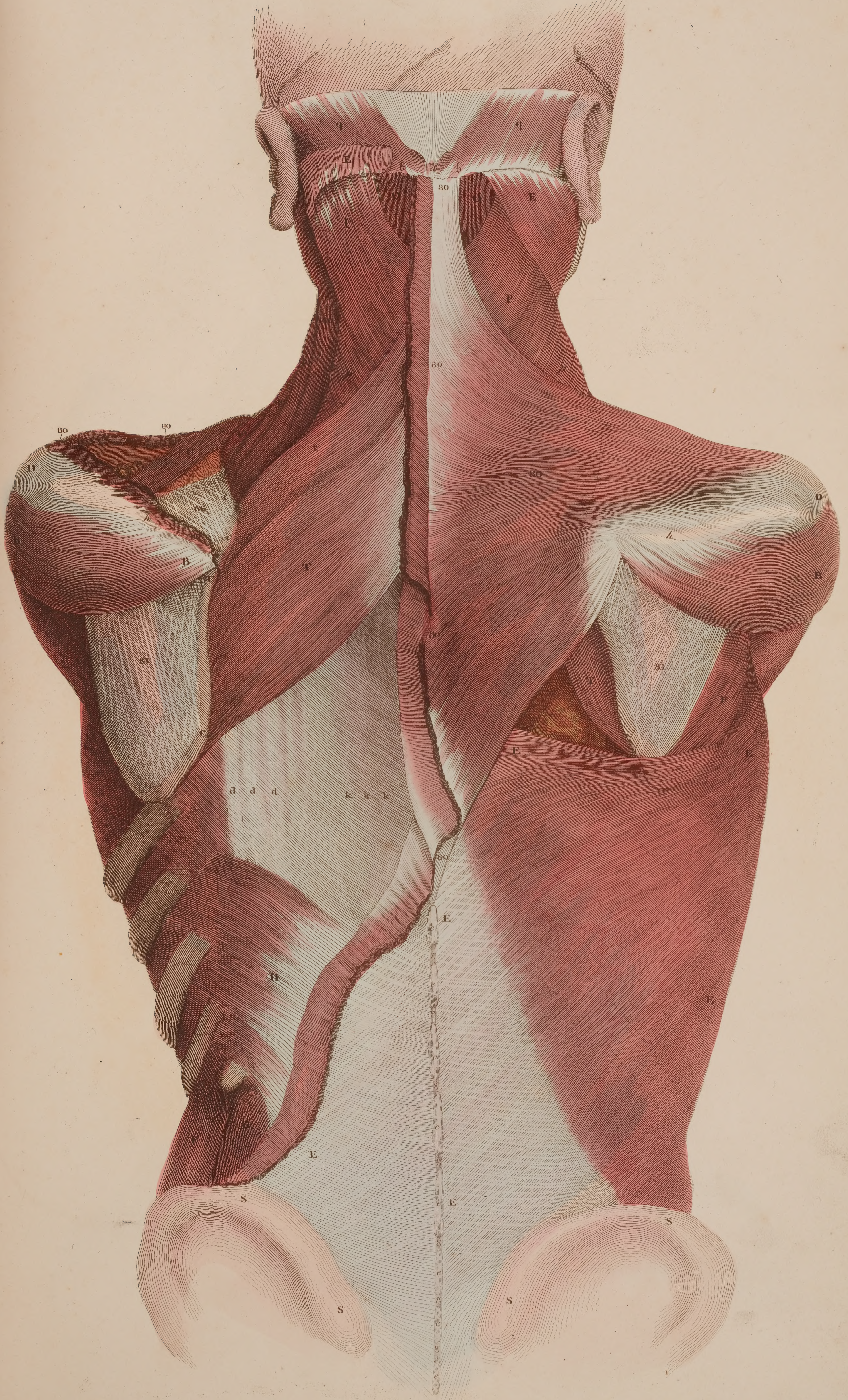
PLATE IV.



e
i
I
A
A
A
A
A
A
A
A
A
A
A
A
A
B
B
o
R
T
h
b
D
D
C
C
e
K
K
P
P

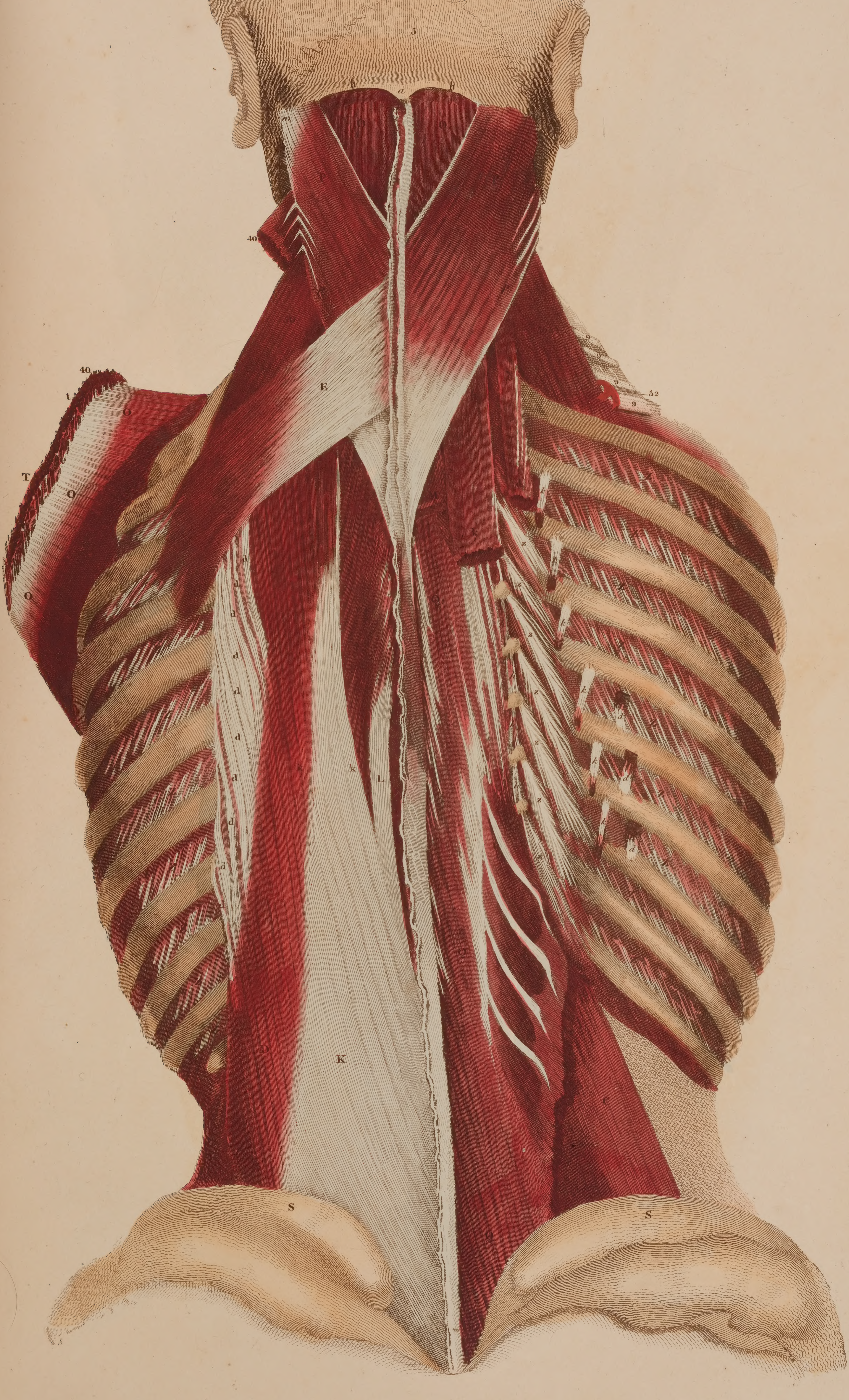
Engd by W.H. Lizars

PLATE V.


q
q
E
b
a
b
80
O
O
E
F
P
80
80
U
80
D
D
60
h
h
B
B
C
T
t
T
80
81
81
F
E
E
d d d
k k k
80
E
H
E
E
S
S
S
S
e
g
e

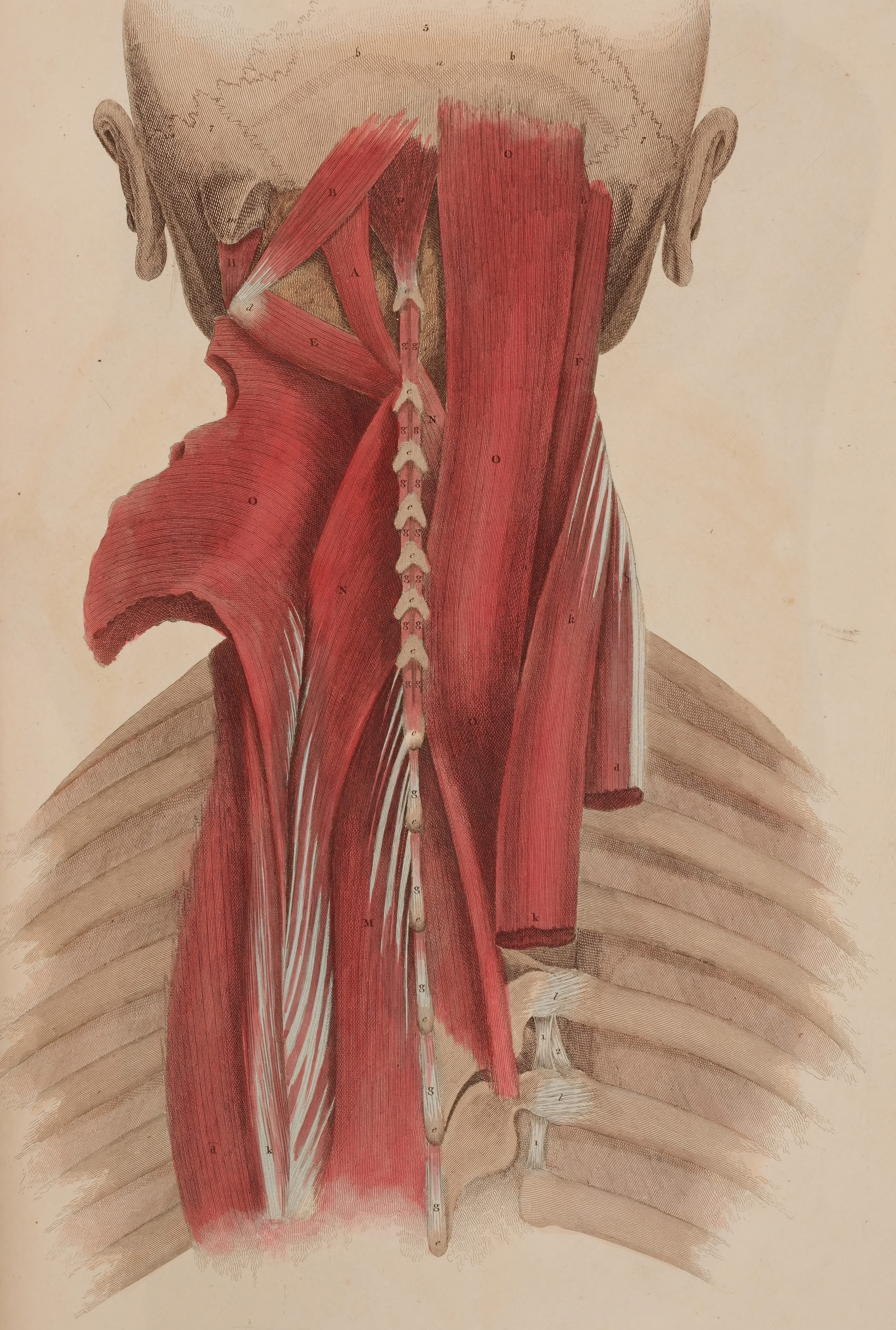
Engd. by W.H. Lizars

PLATE VI.


5
b
a
b
m
O
O
P
P
40
9
9
9
52
9
40
t
O
E
T
O
O
Z
k
Z
Z
k
Z
d
d
d
d
d
d
d
d
k
k
L
D
K
C
S
O
S

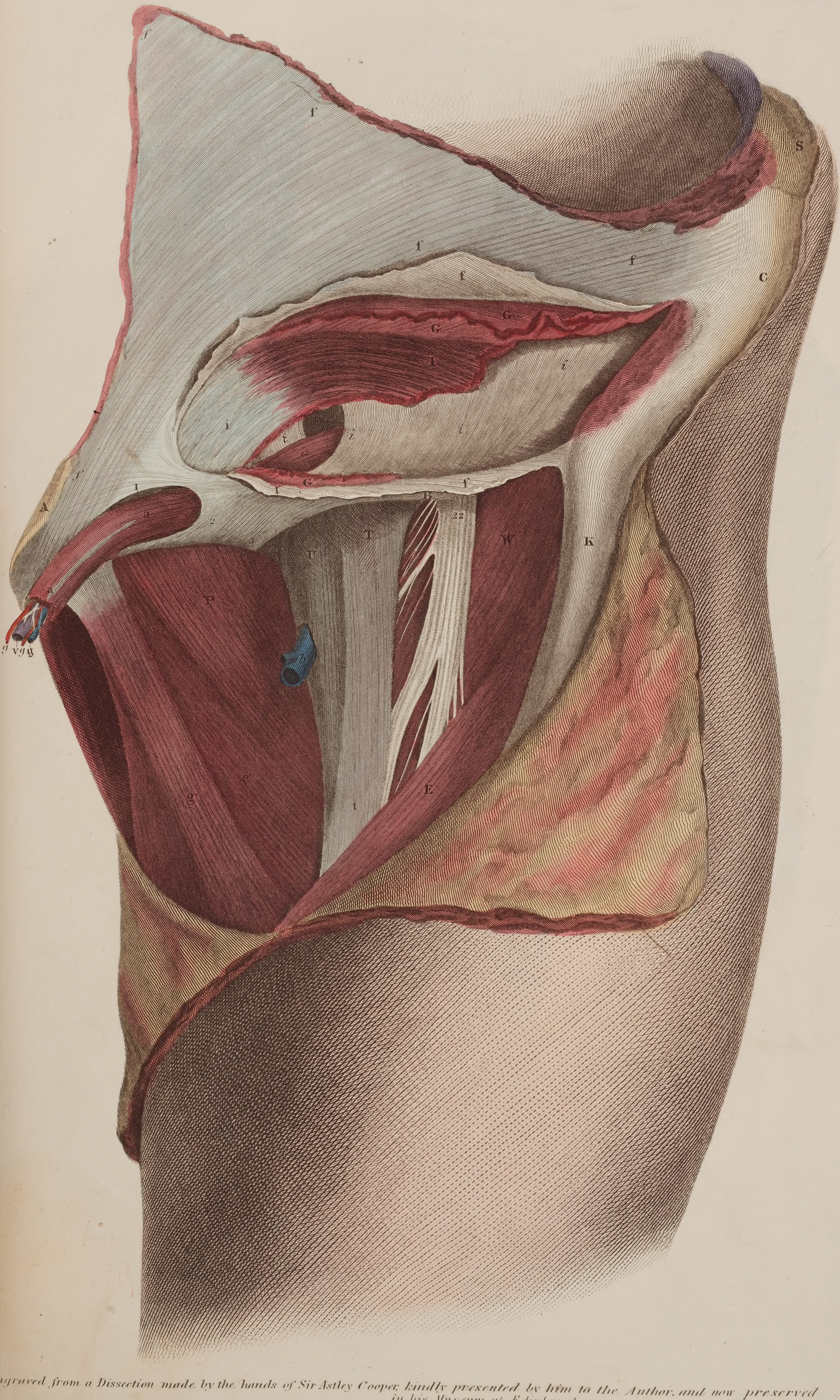
Engd. by W.H. Lizars

PLATE VII.


5
b
a
b
7
7
O
B
P
B
H
A
d
E
F
N
O
O
N
k
O
d
M
k
l
1
2
l
1
d
k
g
e

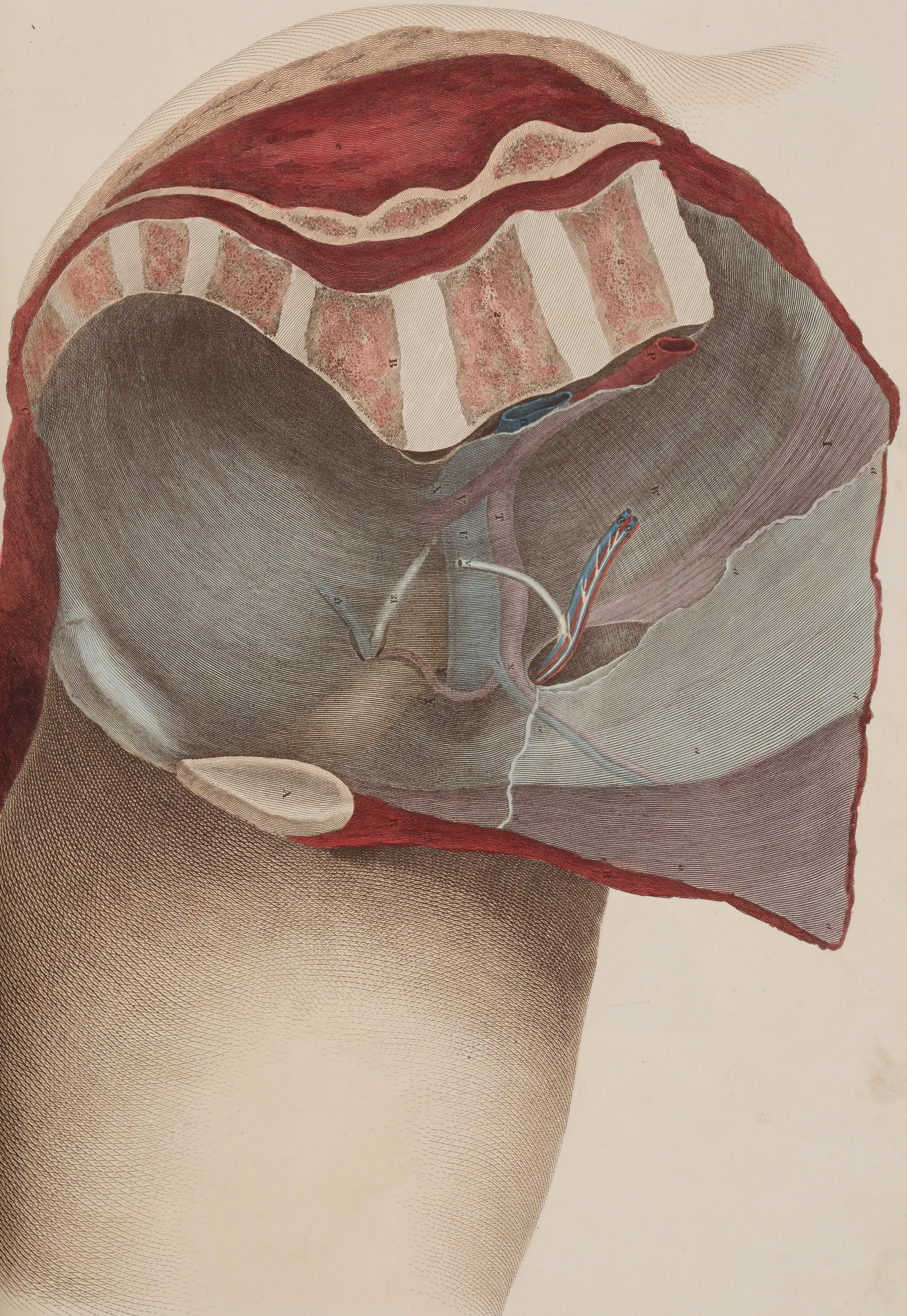
Engd. by W.H.Lizars

PLATE I.


f
f
S
f
f
f
C
G
G
G
I
i
i
i
i
t
d
A
f
1
a
2
3
f
G
f
B
22
T
U
W
K
a
g v g g
P
E
c
g
t

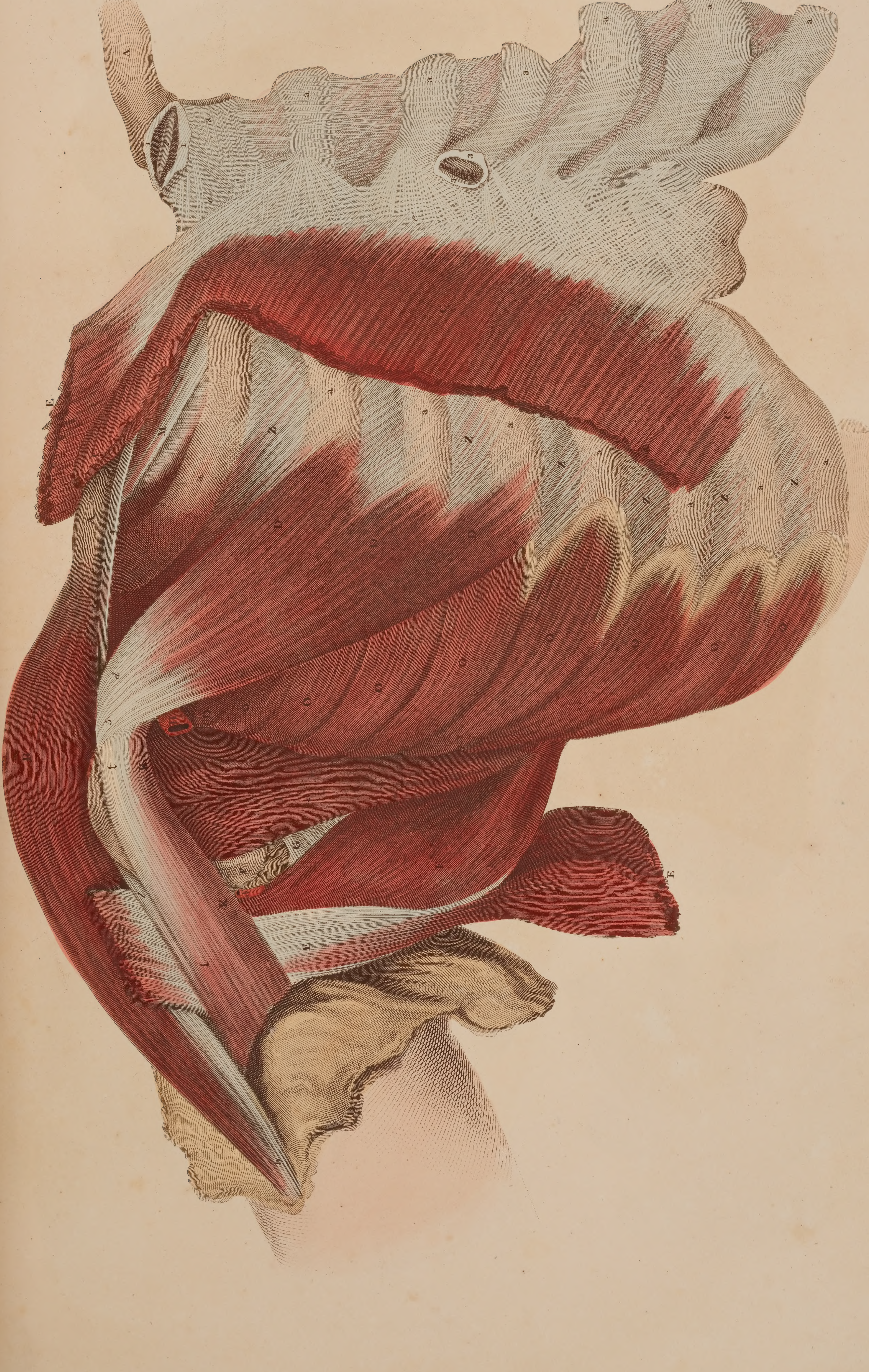
Engraved from a Dissection made by the hands of Sir Astley Cooper, kindly presented by him to the Author, and now preserved in his Museum at Edinburgh.

Engraved by W.H.Lizars


C
2
2
B
P
O
I
N
T
U
F
V
W
X
A
R
R

Engraved by W.H. Lizars

PLATE VIII.


A
a
c
1
2
3
E
C
M
b
D
Z
O
B
K
I
G
F
L
d

Engraved by W.H. Lizars

PLATE IX.

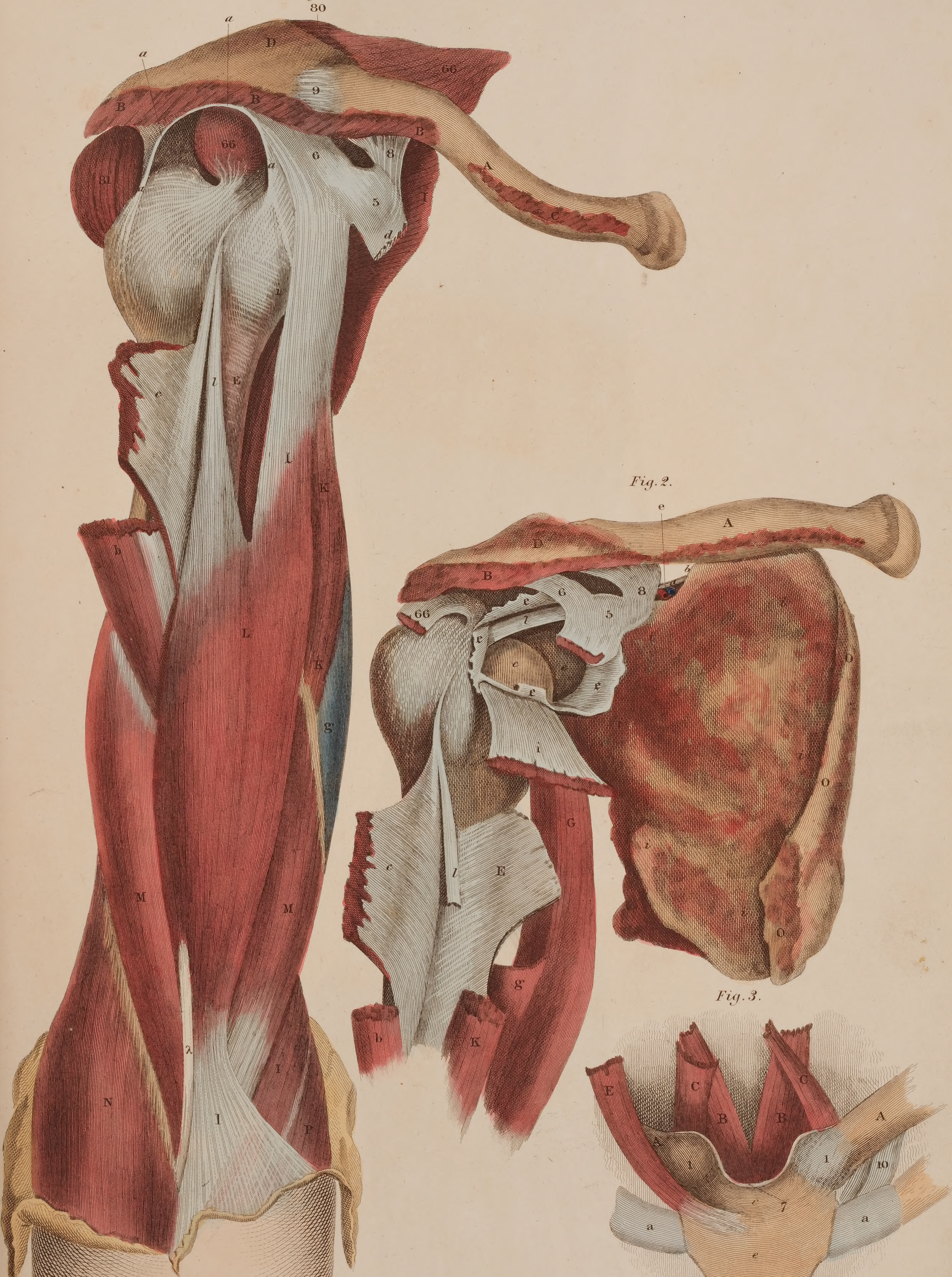


Fig. 1.

80
a
a
D
66
9
B
B
B
a
66
6
8
81
a
A
5
I
C
d
i
c
l
E
l
K
b
L
K
g
M
M
λ
I
N
l
P

Fig. 2.

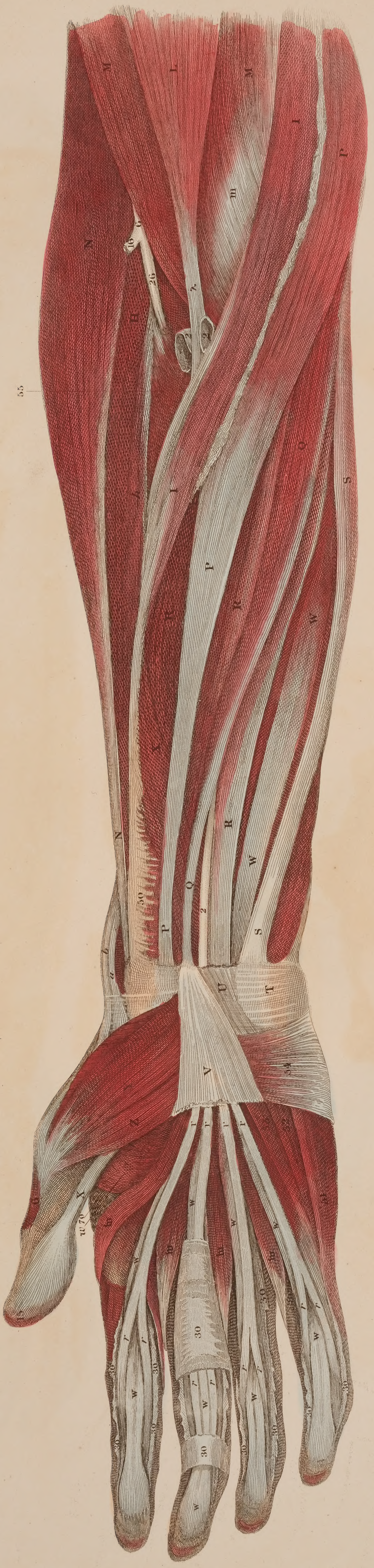
e
A
D
B
b
8
66
6
5
c
l
c
c
c
f
i
D
O
G
c
l
E
O
g
b
K

Fig. 3.

E
C
C
B
B
A
A
1
1
10
c
7
a
a
e
a
a
e

Engraved by W.H.Lizars.

PLATE X.


M
L
M
m
I
P
N
16
26
2
2
55
R
I
O
S
P
Y
R
W
Z
N
30
Q
2
R
W
S
U
T
V
34
Z
X
w70
30
W

Engraved by W.H. Lizars

PLATE XI.

Fig. 1.

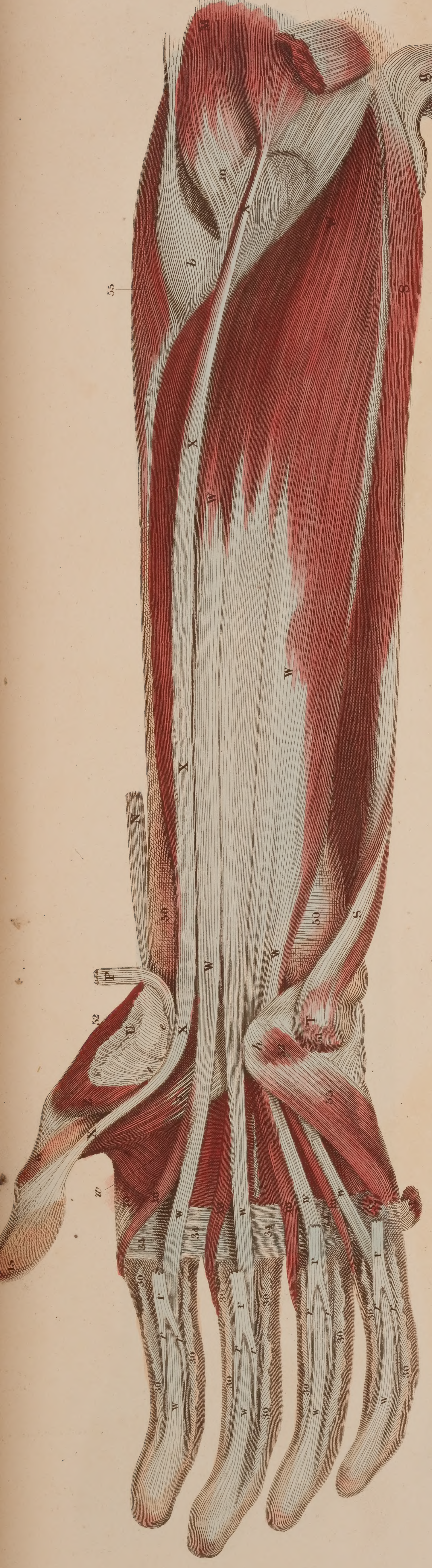

M
m
b
55
X
W
S
g
N
50
P
52
T
51
U
w
34
30
r
15

Fig. 3.

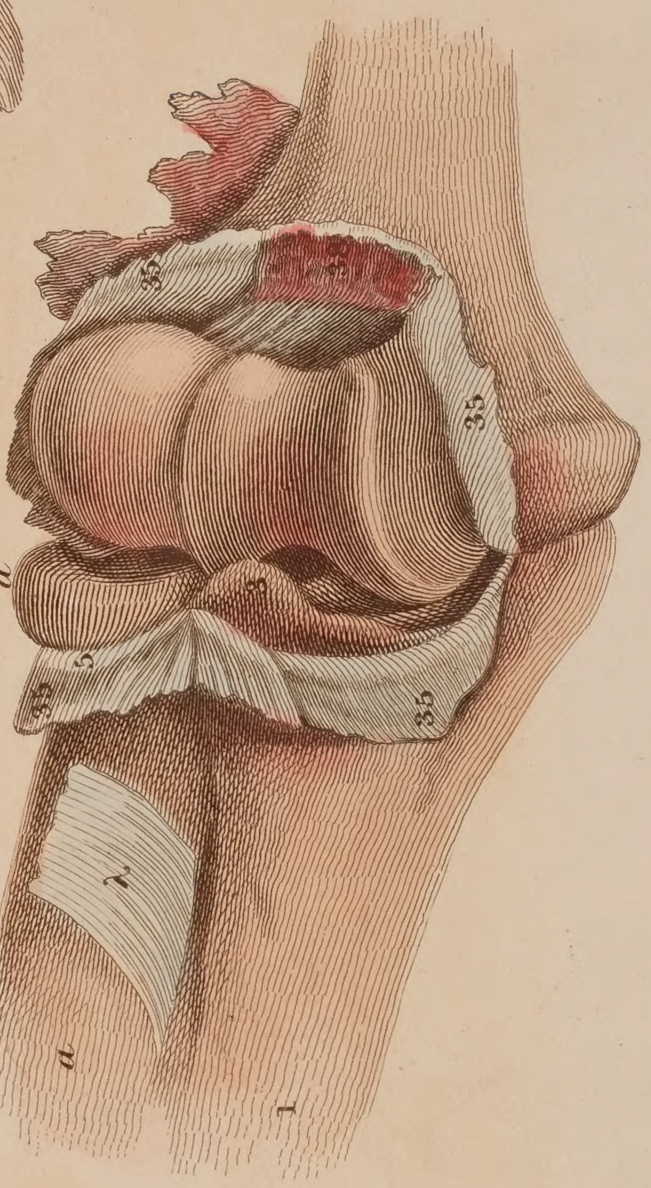


Fig. 4.

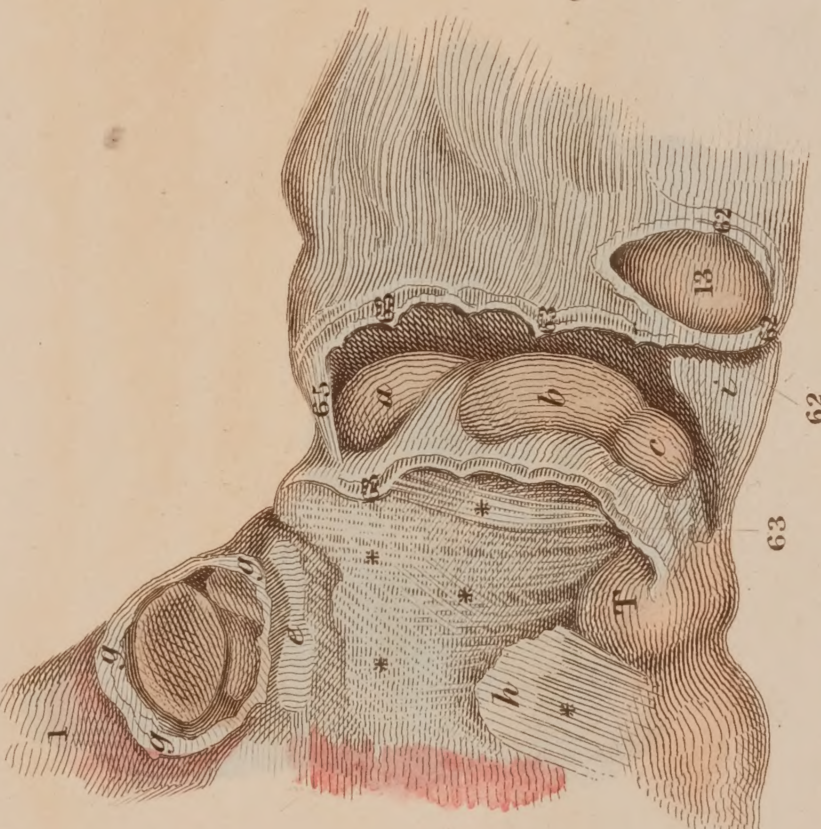
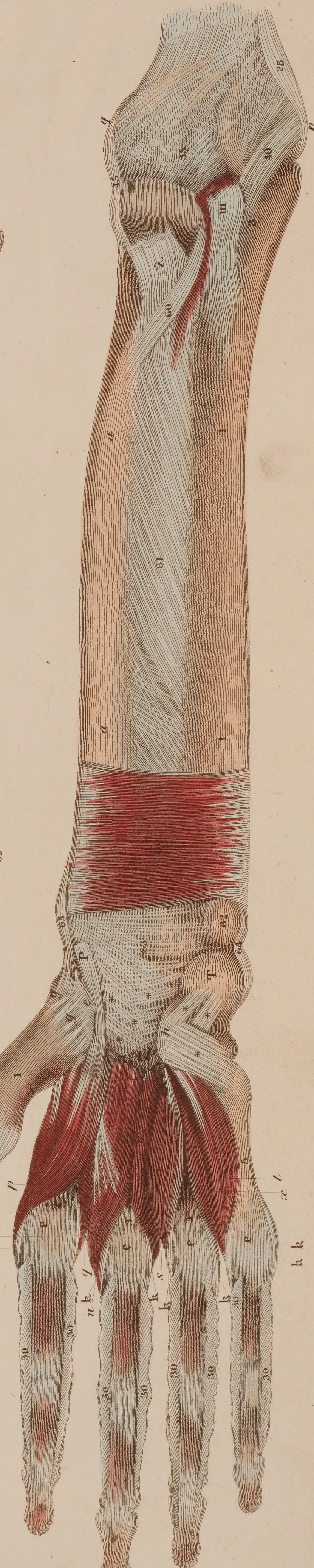

13
62
63
65
a
b
c
T
1

Fig. 2.


23
p
q
35
40
45
m
60
a
1
61
50
62
64
65
P
T
e
k
kk
n
m
30
x
t
s

Engraved by W.H.Lizars.

PLATE XII.

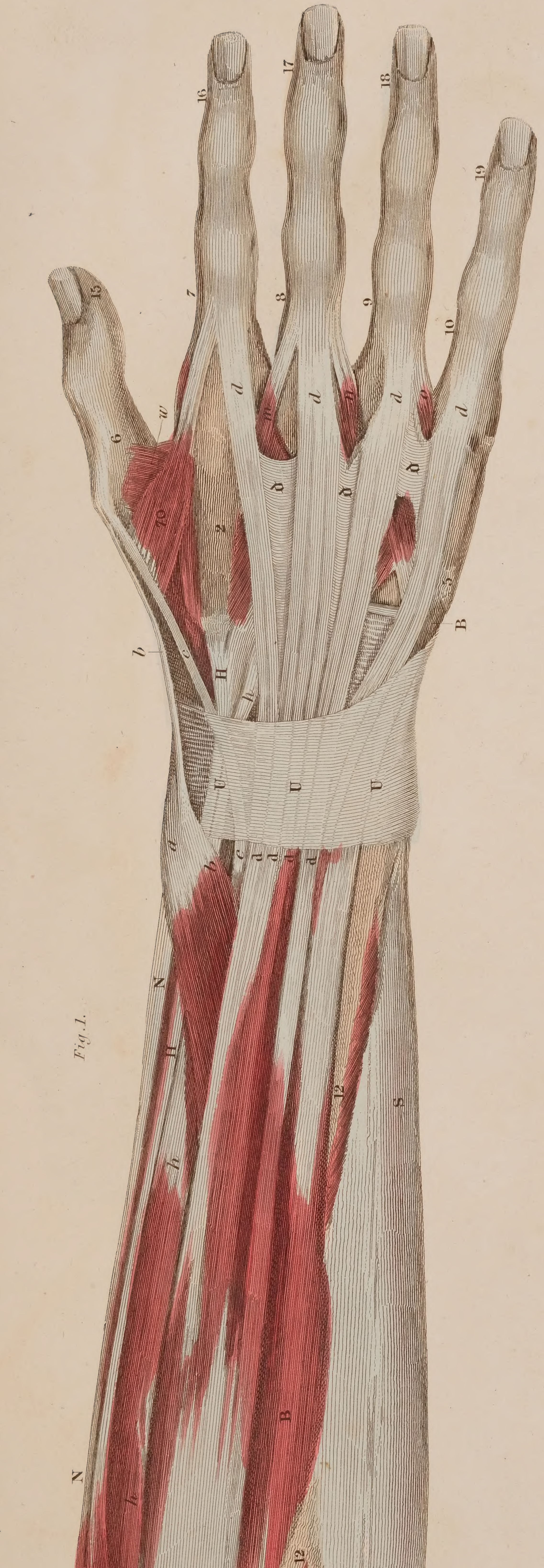

16
17
18
19
15
7
8
9
10
w
6
20
2
d
d
d
d
b
H
B
5
U
U
U
a
b
c
d
d
d
N
H
h
N
h
D
B
12
12
S
S
E
4
H
N
35

Fig. 1.

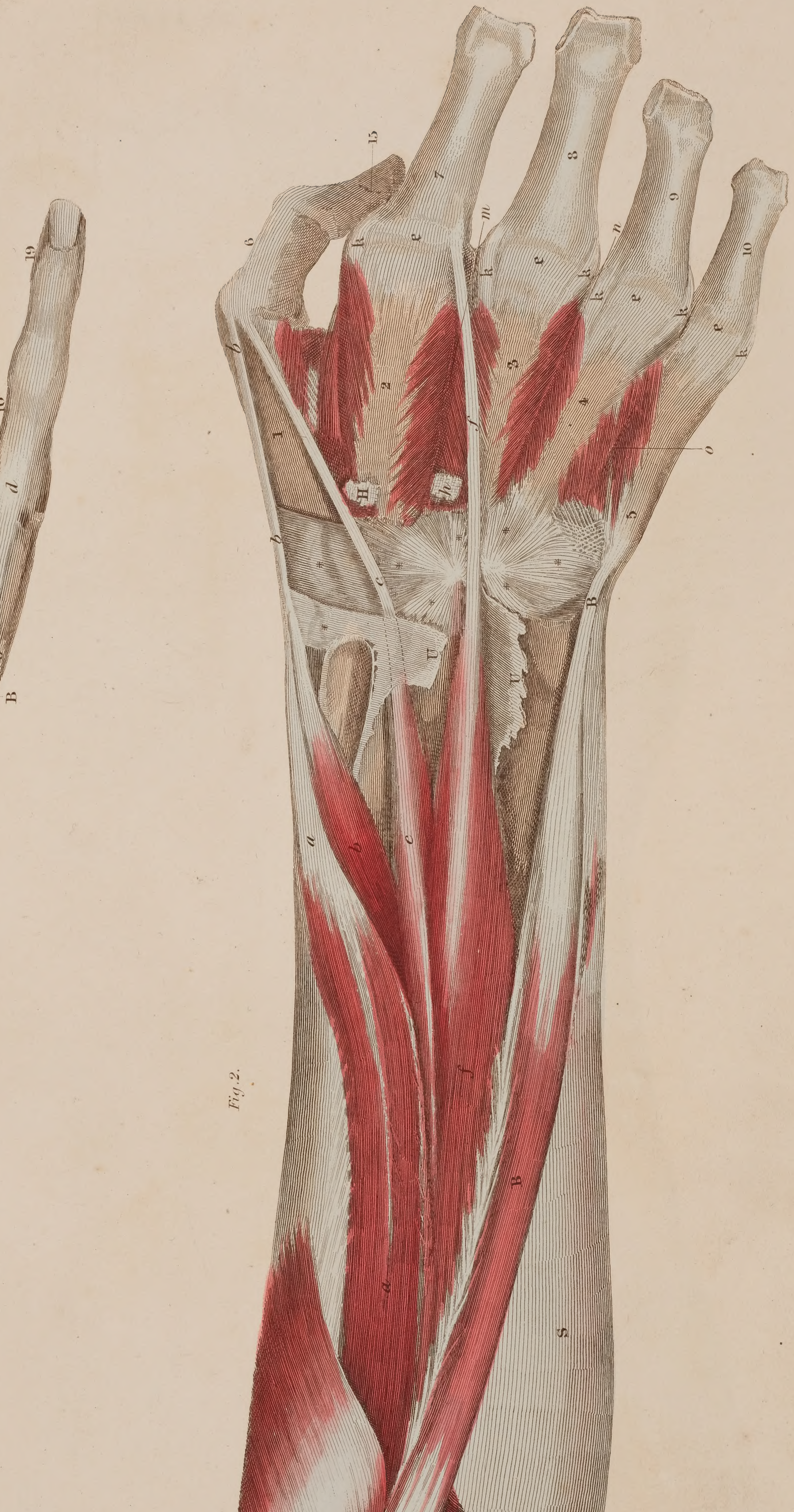
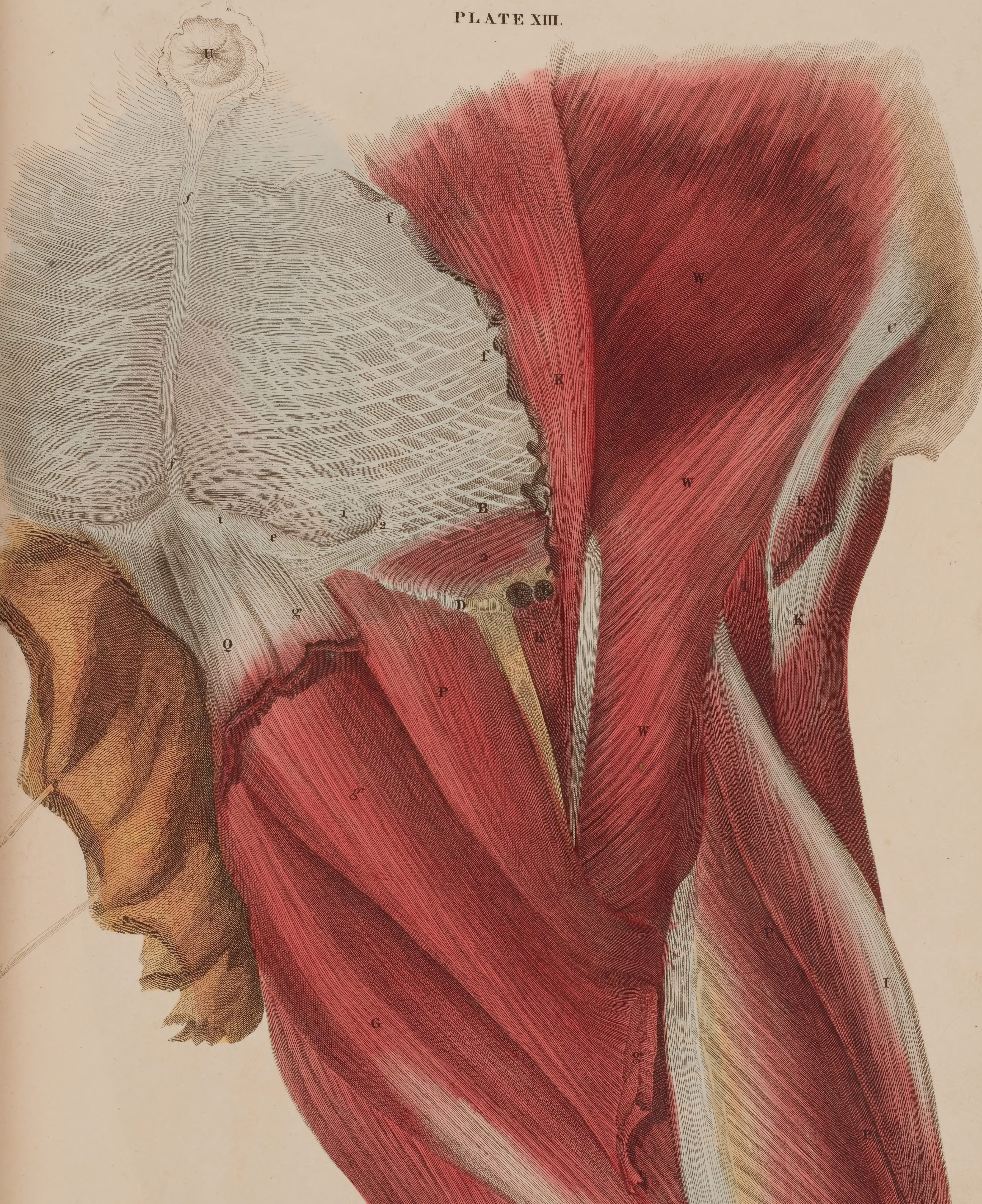

15
m
7
8
9
10
6
b
k
e
1
2
3
4
f
o
5
H
a
c
U
U
B
a
b
c
f
d
B
S
55
B
D
F
H
N
25
35
6
Q

Fig. 2.

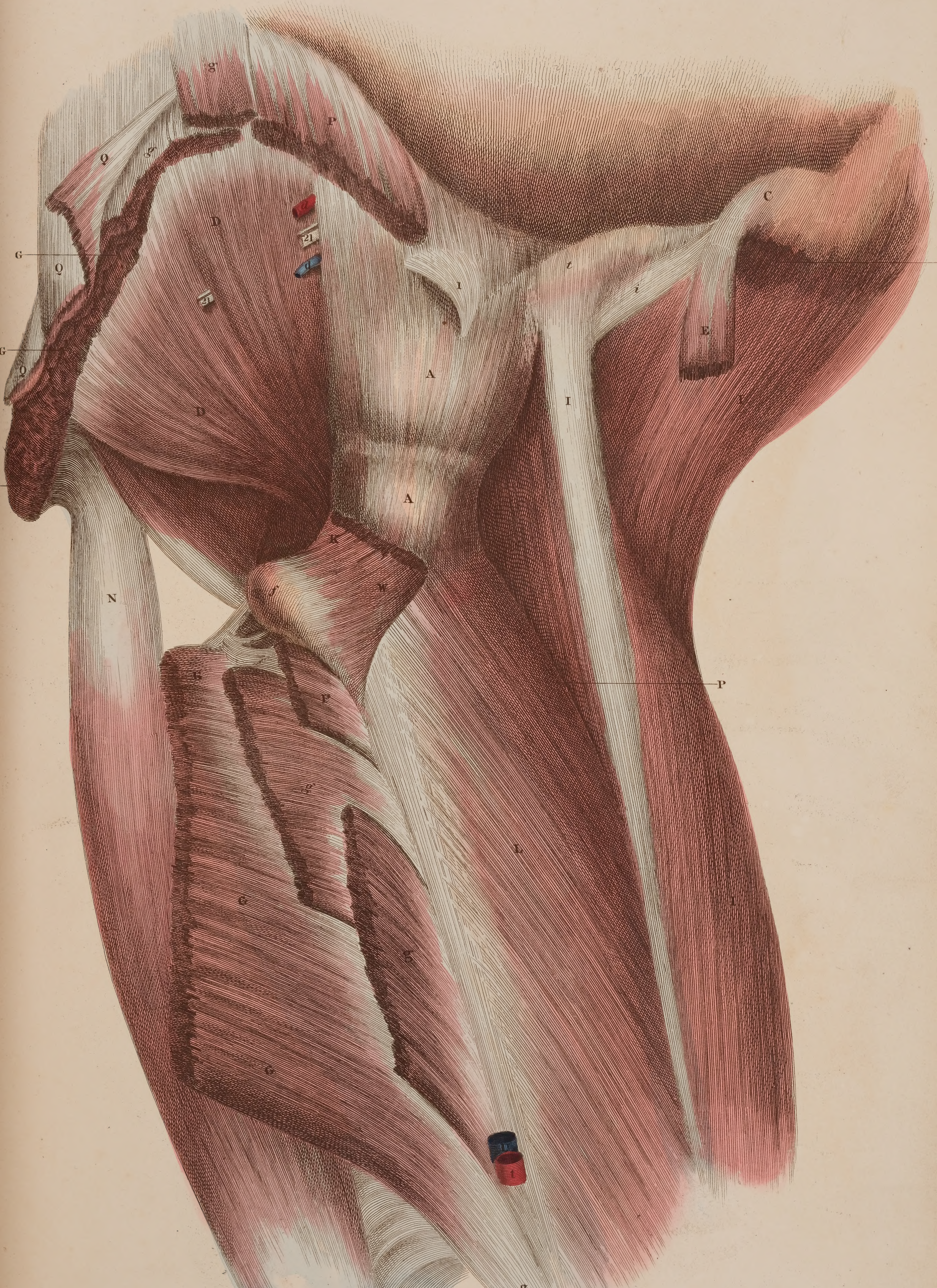
Engraved by W.H.Lizars.

PLATE XIII.


U
f
f
W
C
f
K
W
f
E
t
e
1
2
B
3
I
D
K
g
Q
K
P
W
g
P
I
G
g
P
L
P
g

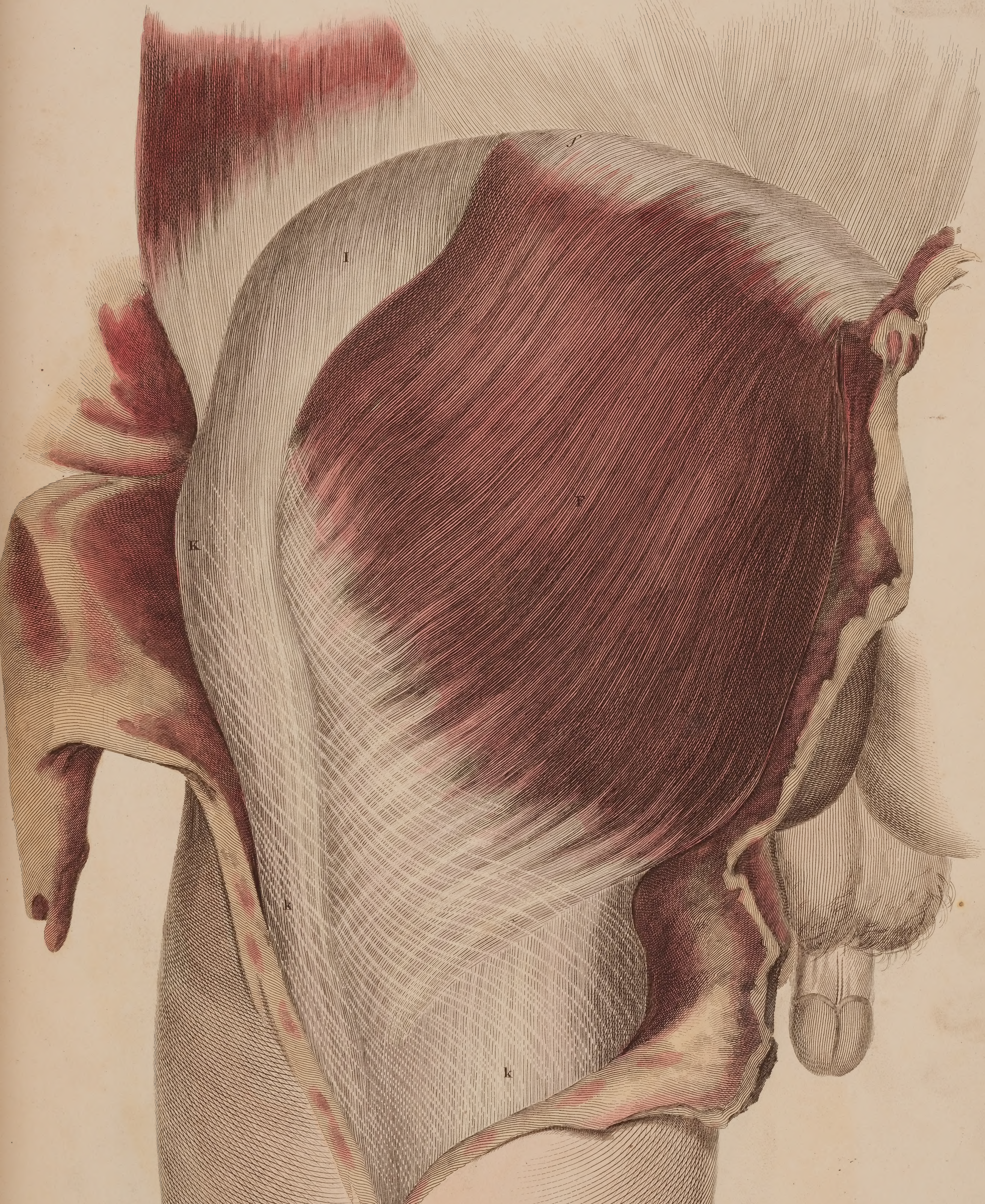
Engraved by W.H.Lizars.

PLATE XIV.


g
P
Q
g
D
a
21
a
C
G
Q
t
i
1
21
E
G
Q
A
I
I
D
A
K
W
f
N
G
P
F
g
L
G
I
G
G
1
g

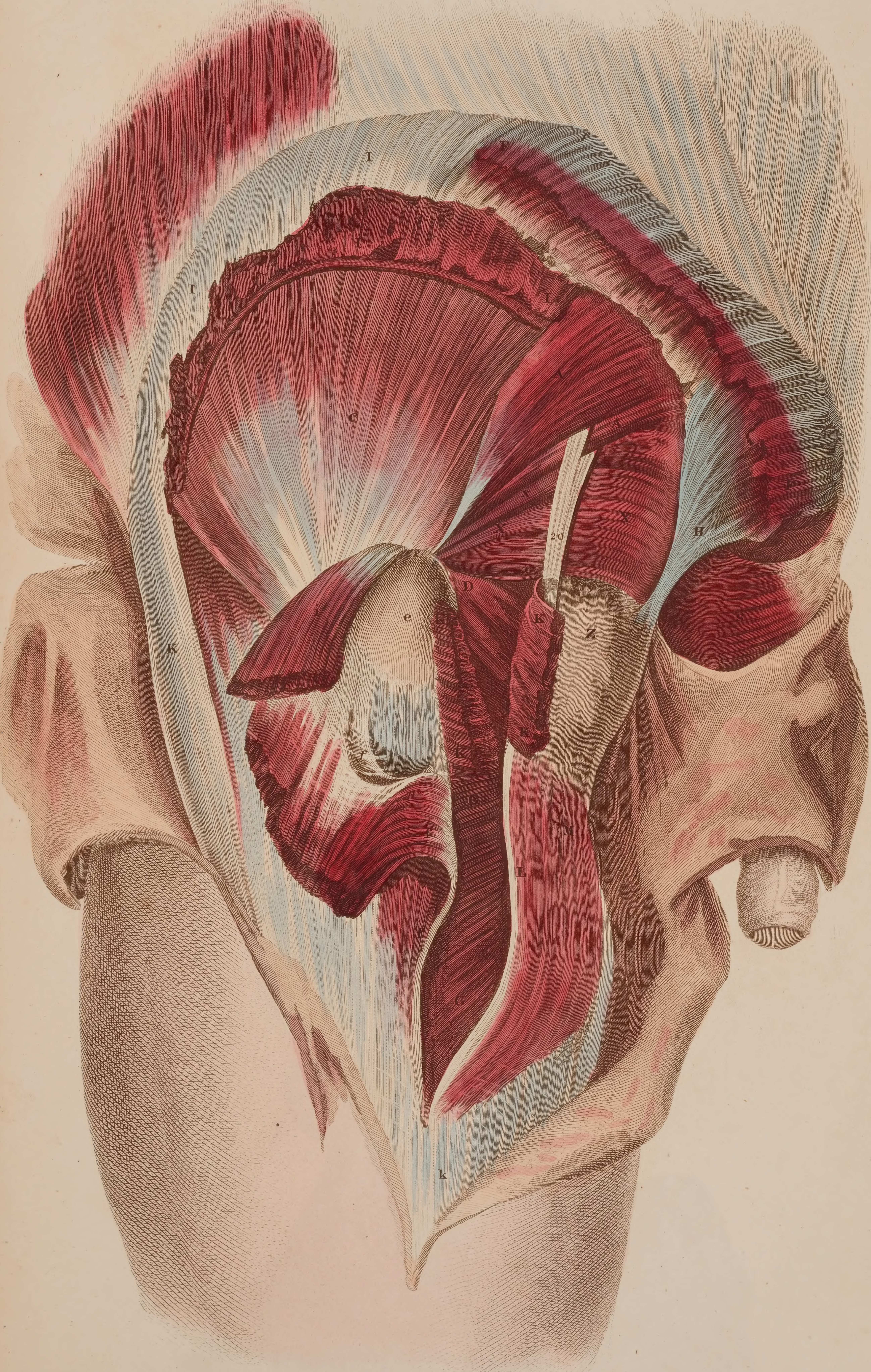
Engraved by W.H.Lizars

PLATE XV.



Engraved by W.H.Lizars.

PLATE XVI.


I
F
I
E
I
I
C
A
A
X
X
X
20
H
F
e
D
E
K
K
Z
S
K
K
f
K
G
f
M
L
f
G
k

Engraved by W.H.Lizars.

PLATE XVII.

Fig. 1.

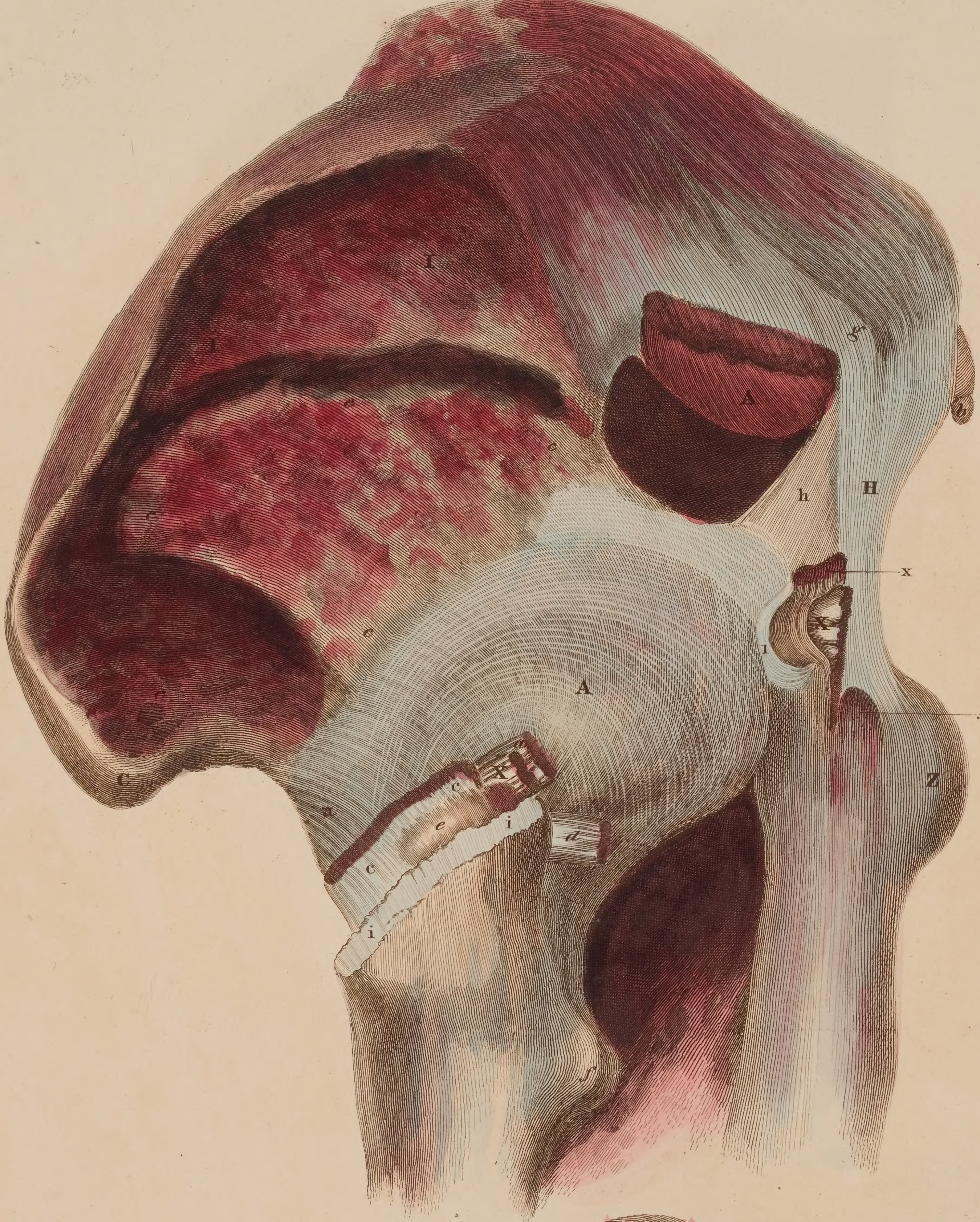

I
I
c
c
c
c
c
A
g
b
h
H
x
X
1
x
A
Z
C
a
X
c
e
i
d
c
i

Fig. 2.

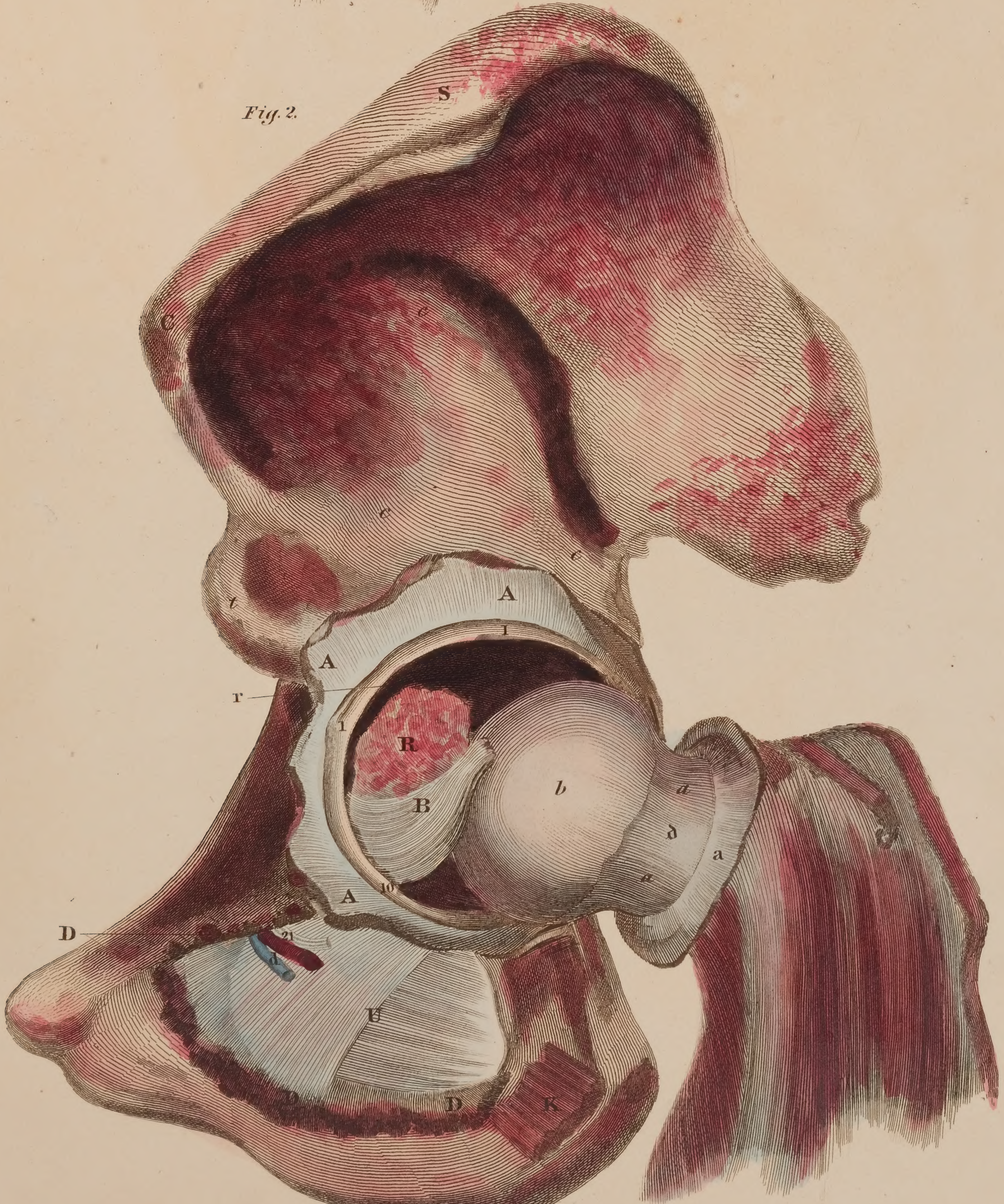

S
C
c
c
c
t
A
A
1
r
1
R
B
b
d
d
a
a
A
10
D
21
U
D
K

PLATE XVIII.

Fig. 1.

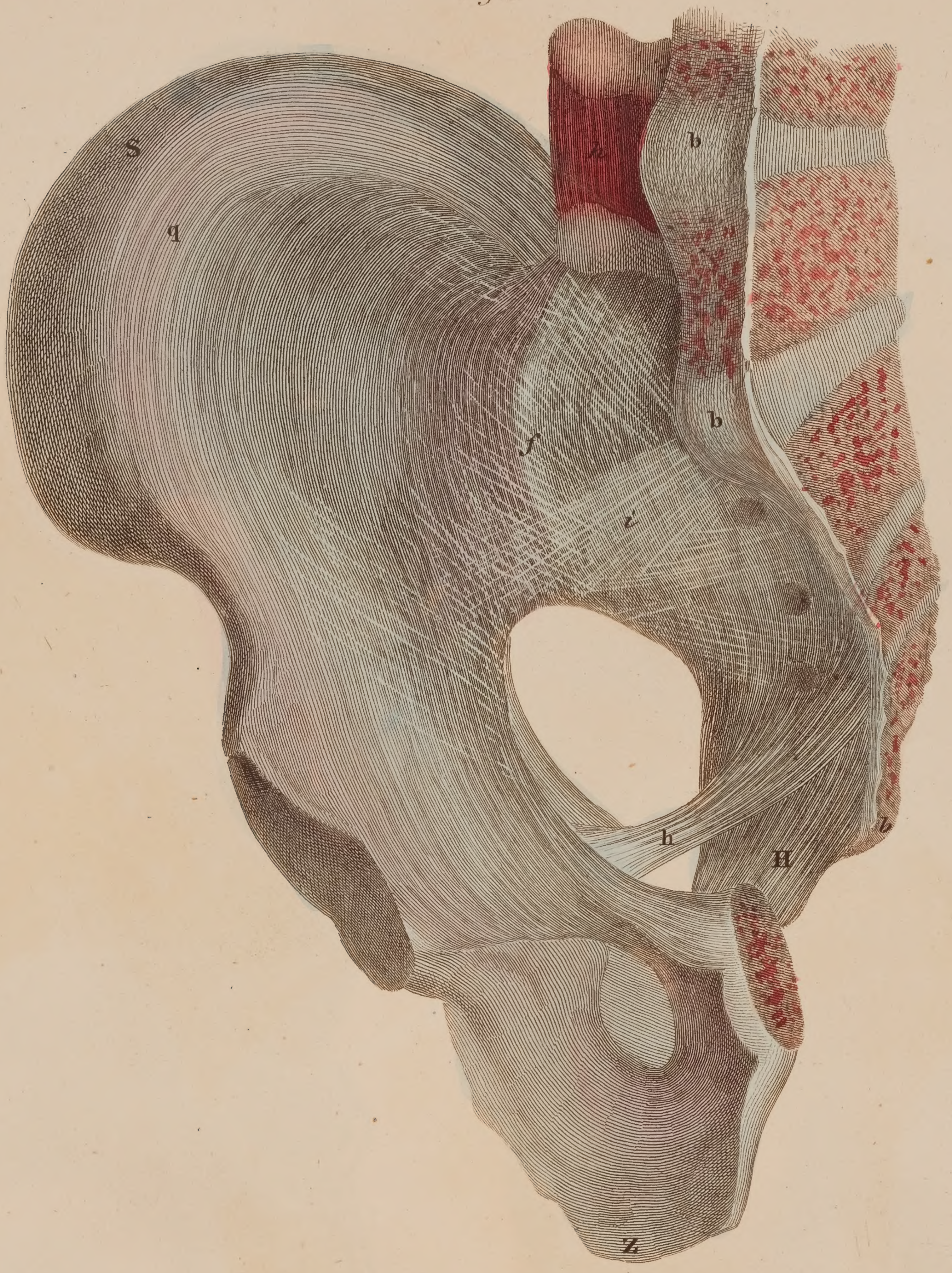

S
q
h
b
b
f
i
h
H
b
Z

Fig. 2.

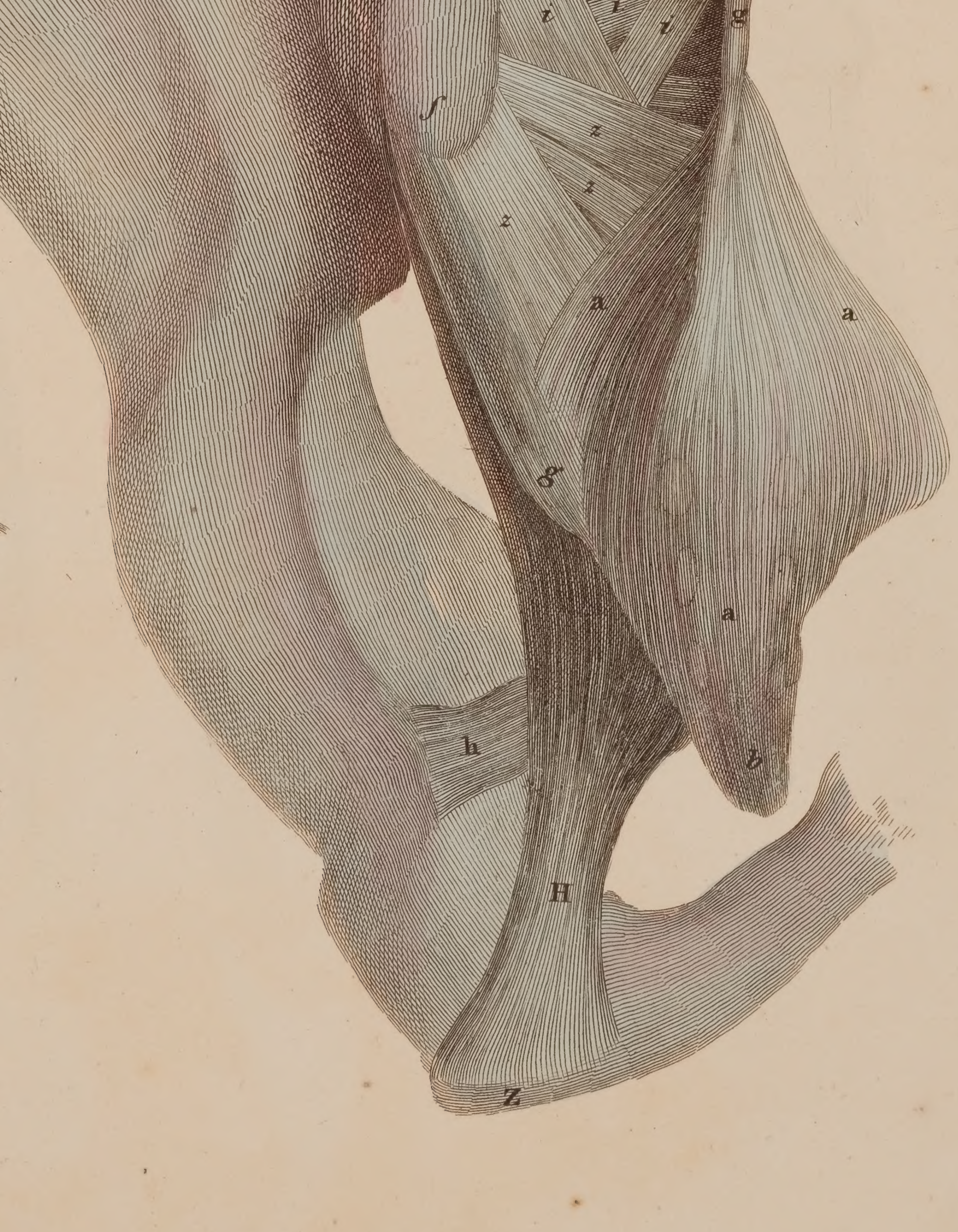
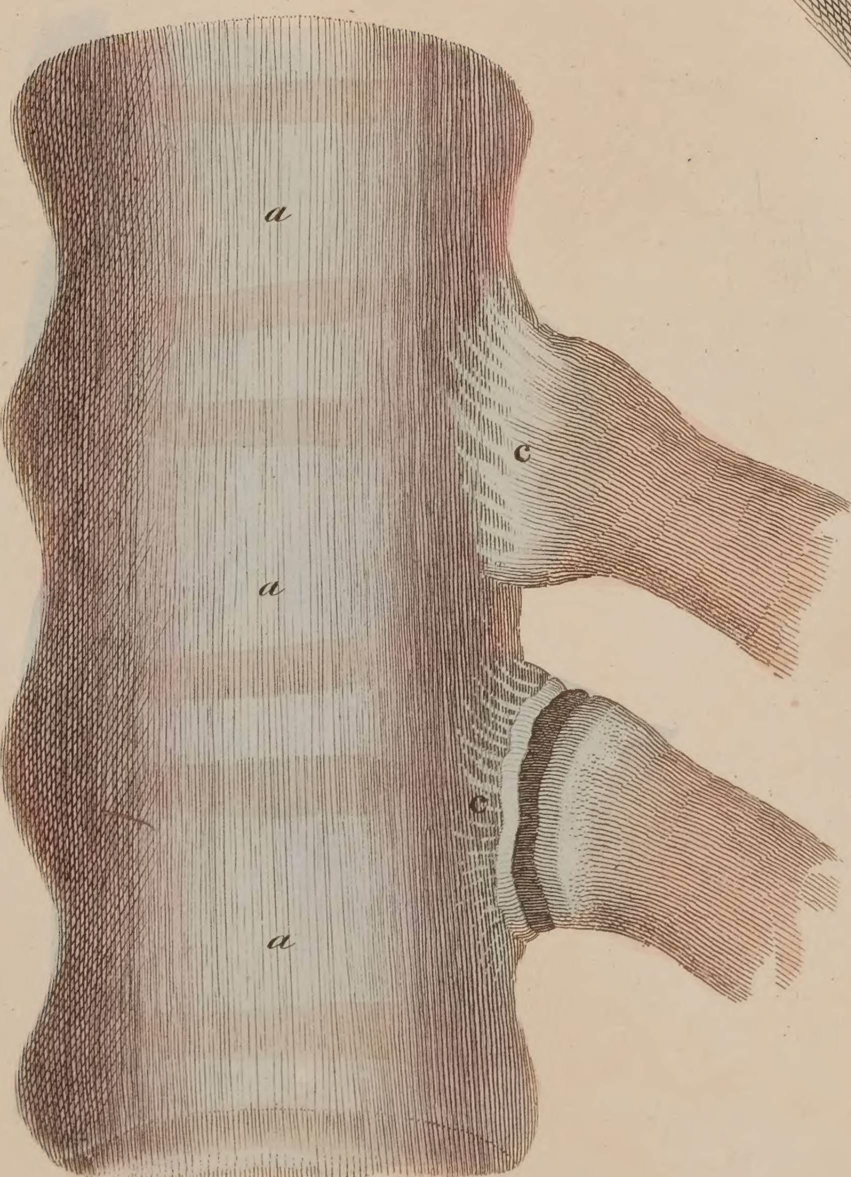

S
k
S
k
2
g
2
k
g
g
i
i
i
f
z
z
z
a
a
g
a
b
h
H
Z

Fig. 3.



Engraved by W.H. [illegible]

PLATE XIX.

Fig. 1.

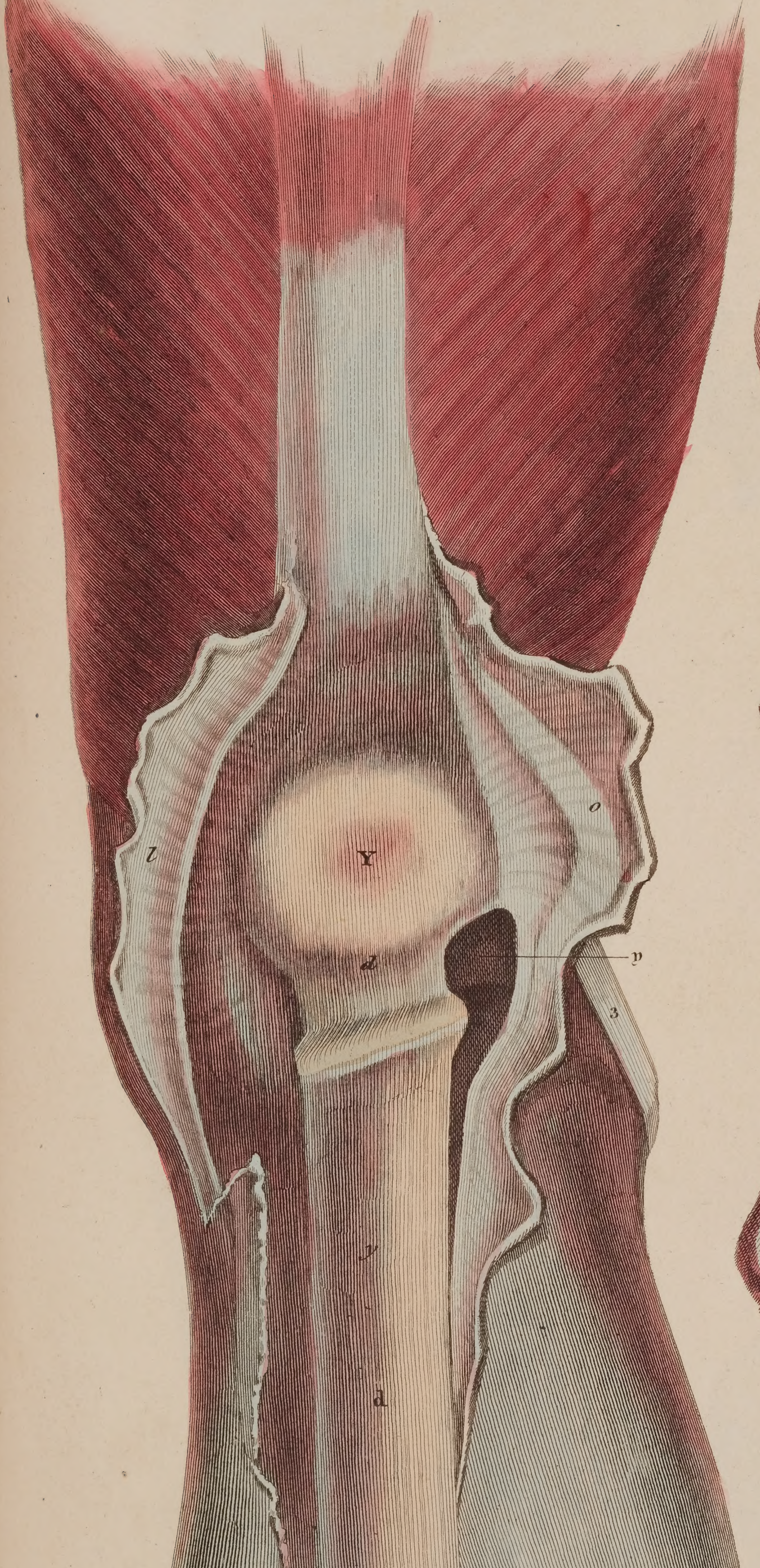
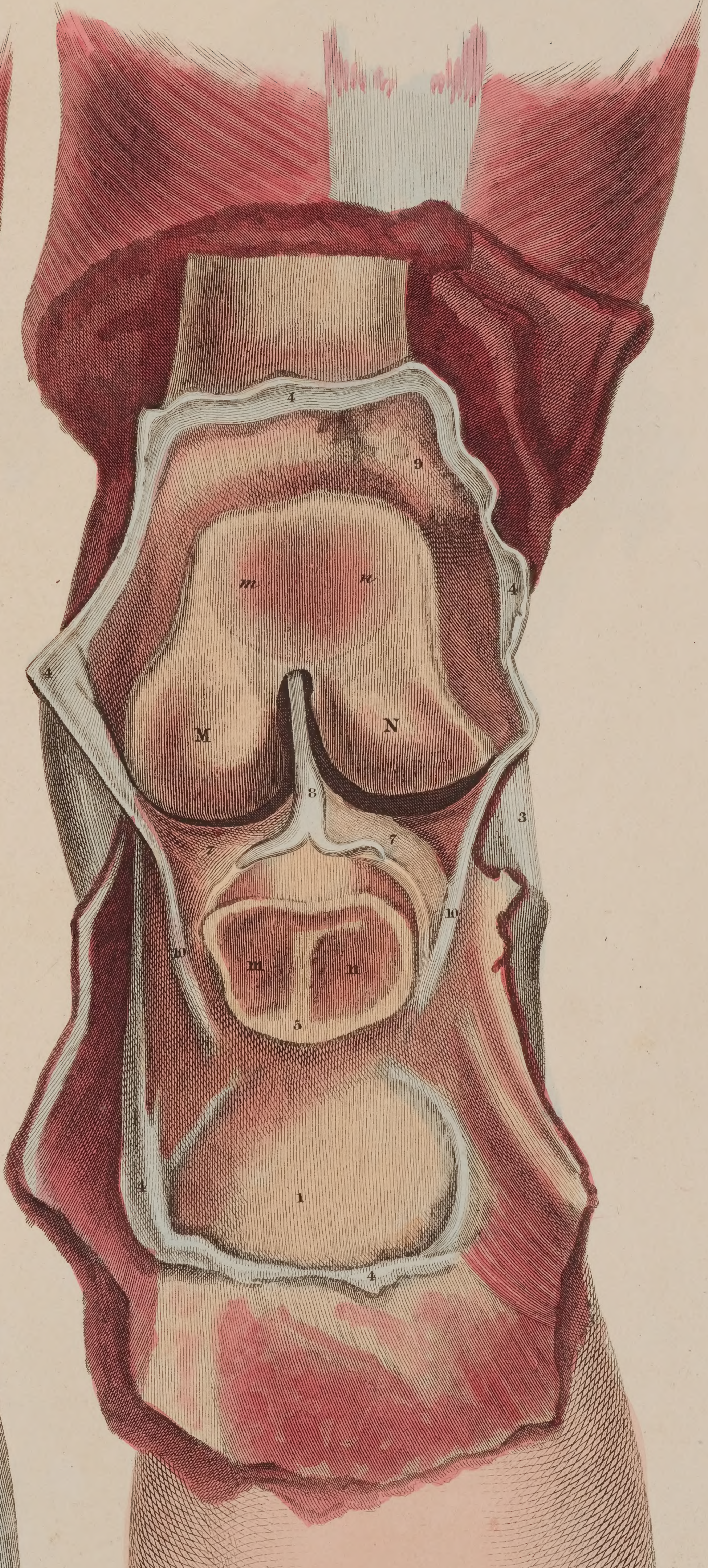


Fig. 2.


4
9
m
n
4
4
M
N
8
3
7
7
10
10
m
n
5
4
1
4

Engraved by W.H.Lizars.

PLATE XX.

Fig. 1.

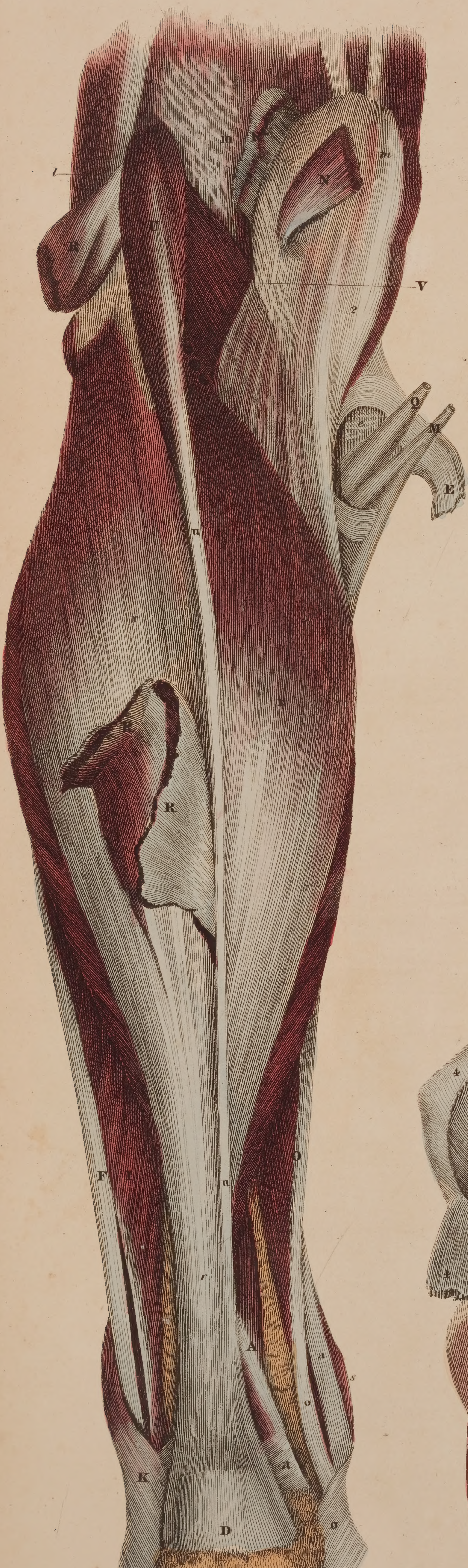

l
10
N
m
N
R
U
V
2
Q
M
E
u
r
r
R
R
F
I
O
u
r
A
a
s
o
a
K
D
o

Fig. 2.

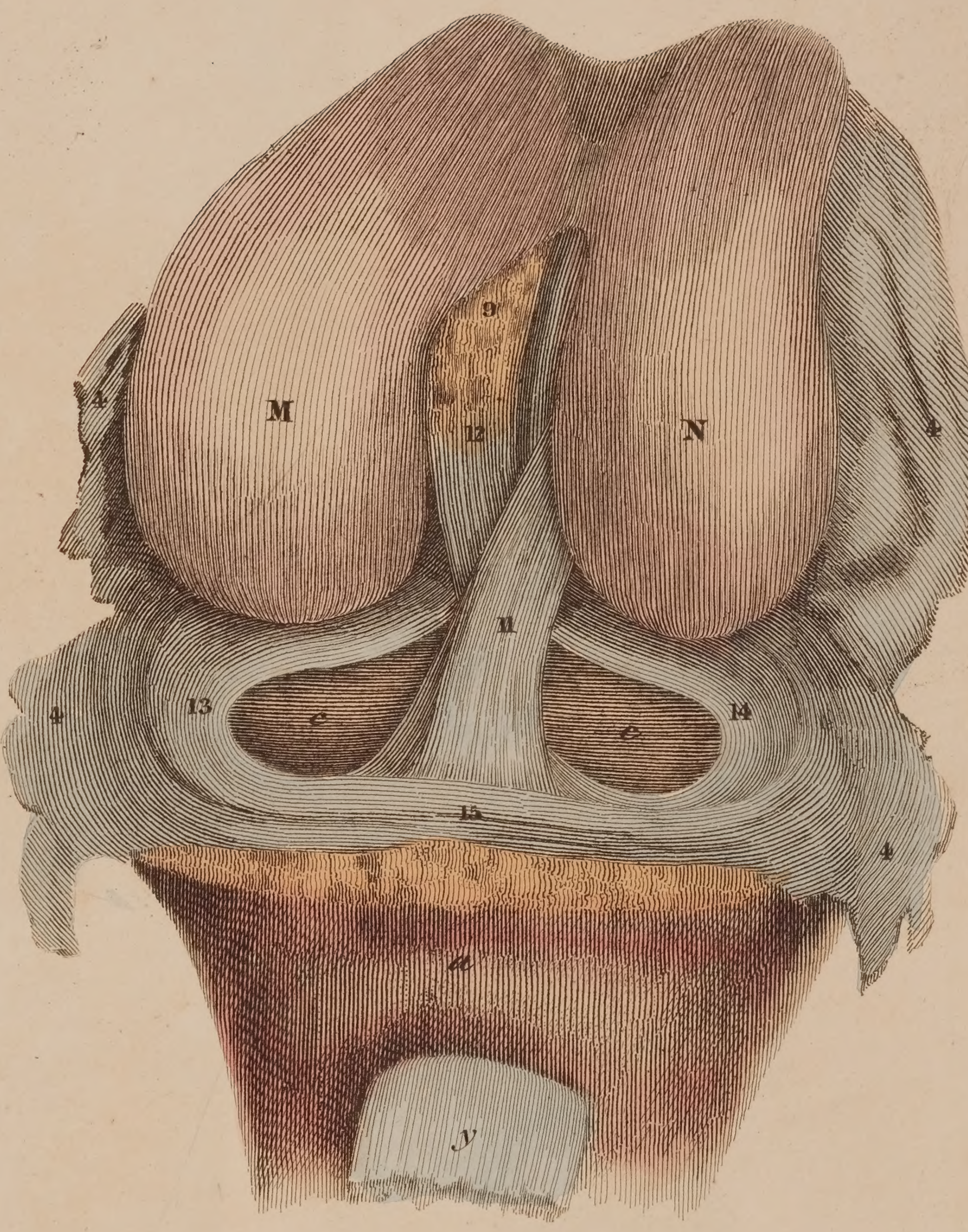
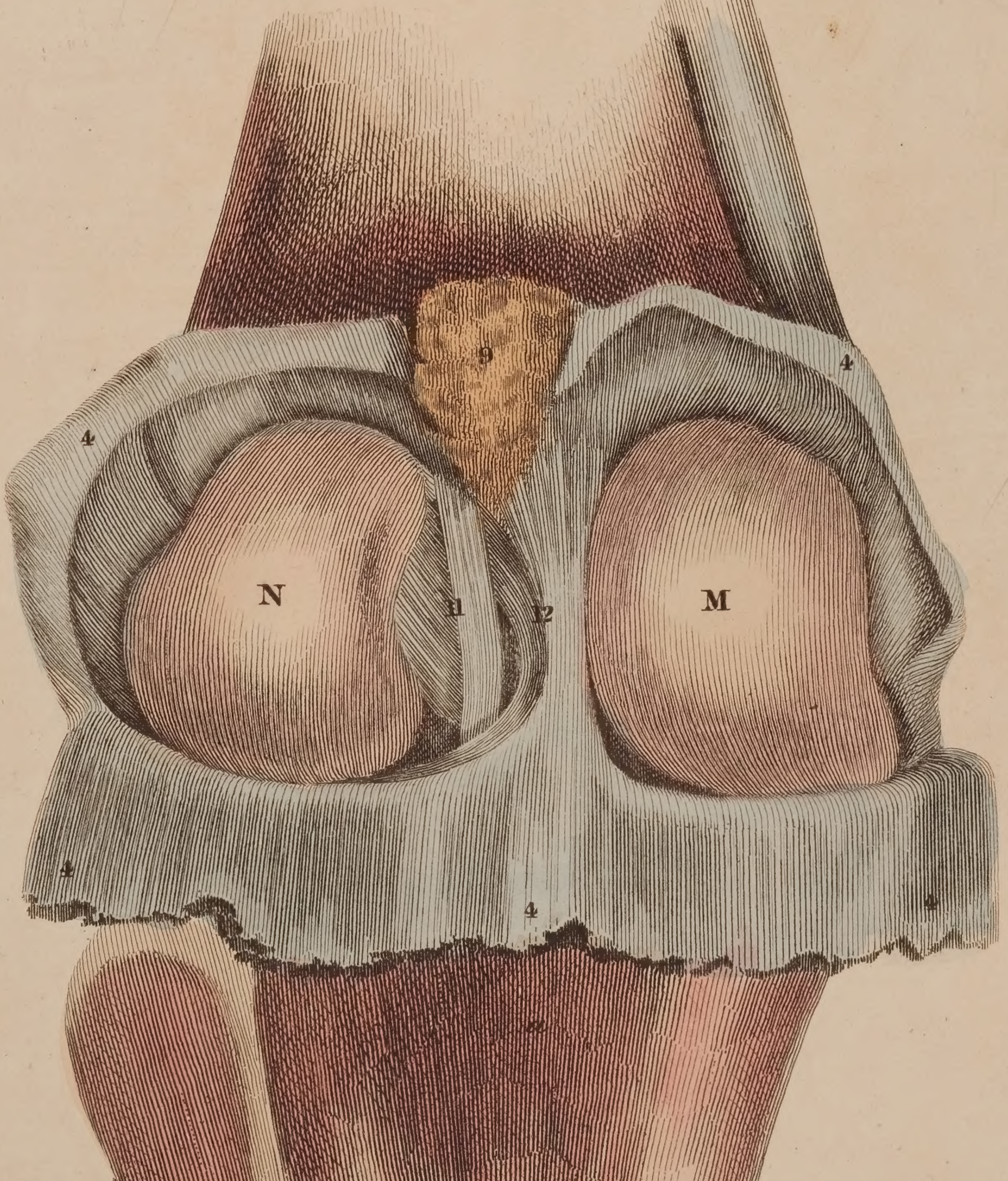

9
4
M
12
N
4
11
4
13
c
c
14
15
4
a
y

Fig. 3.


9
4
4
N
11
12
M
4
4
4
a

Engraved by W.H.Lizars

PLATE XXI.

Fig. 1.

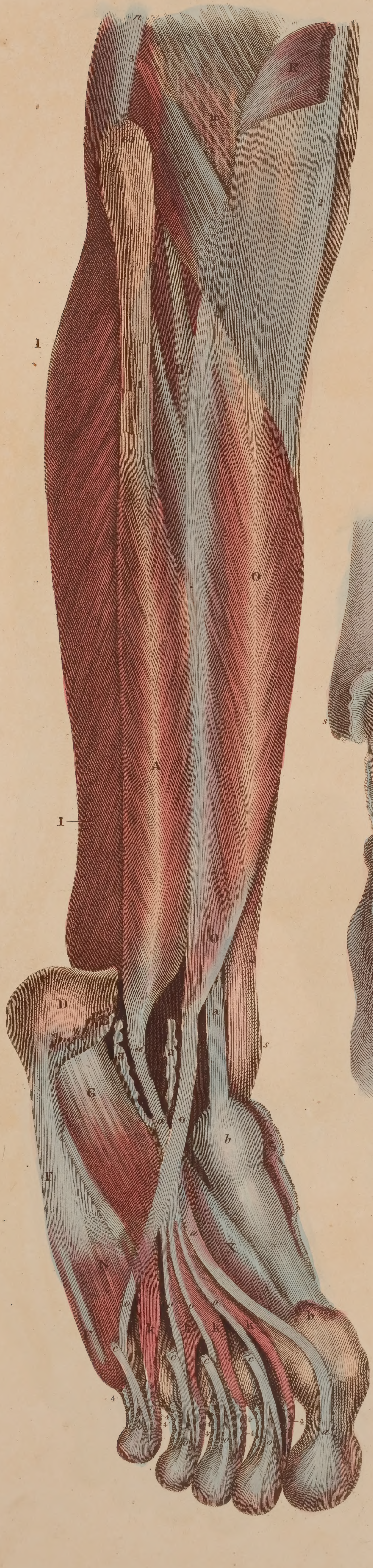

n
3
R
10
60
V
2
I
H
1
O
A
I
O
D
B
C
a
a
a
s
G
o
b
F
X
N
k
k
k
k
b
c
4
a

Fig. 2.

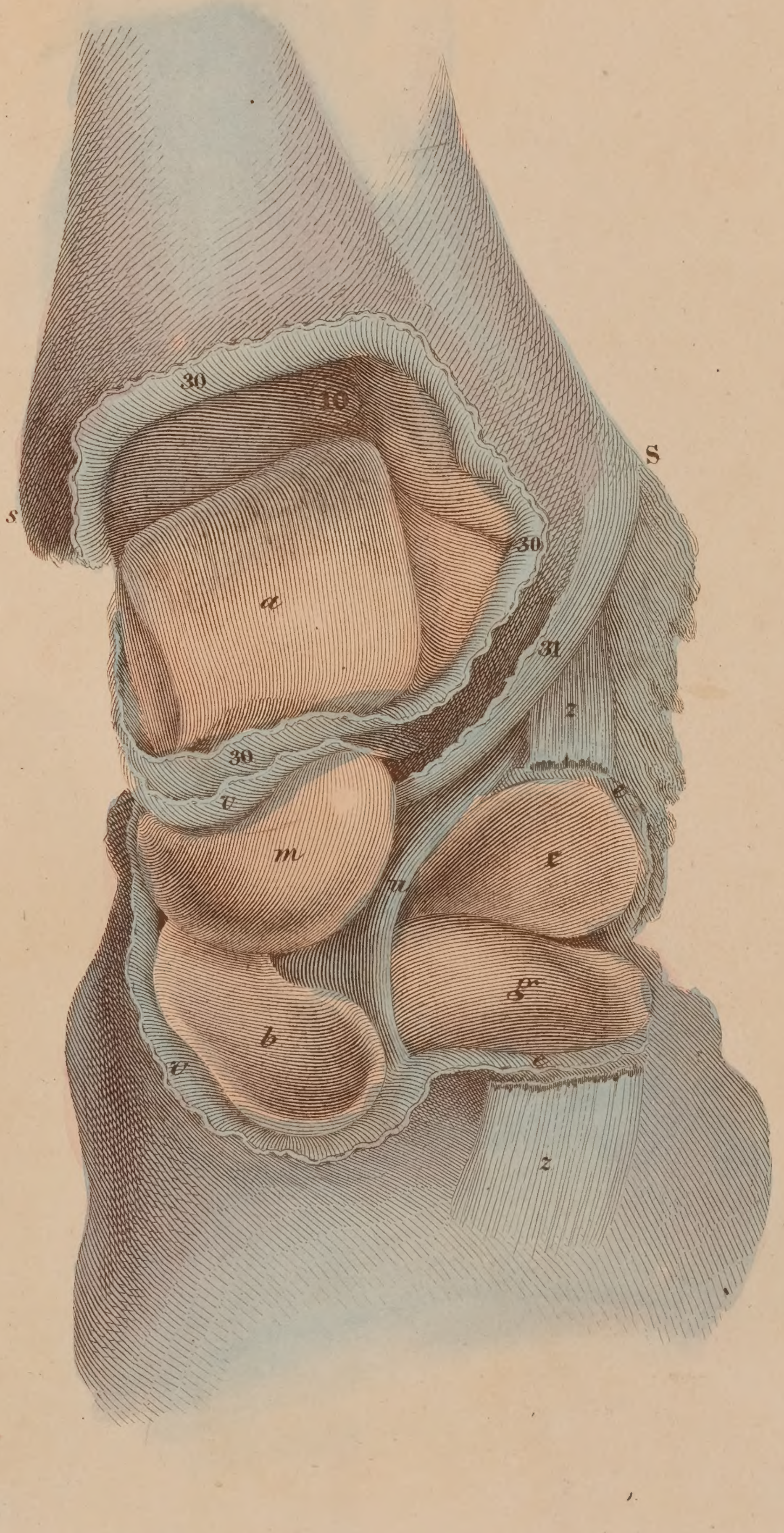

30
10
S
s
a
30
31
30
z
v
m
r
u
g
b
v
e
z

Fig. 3.

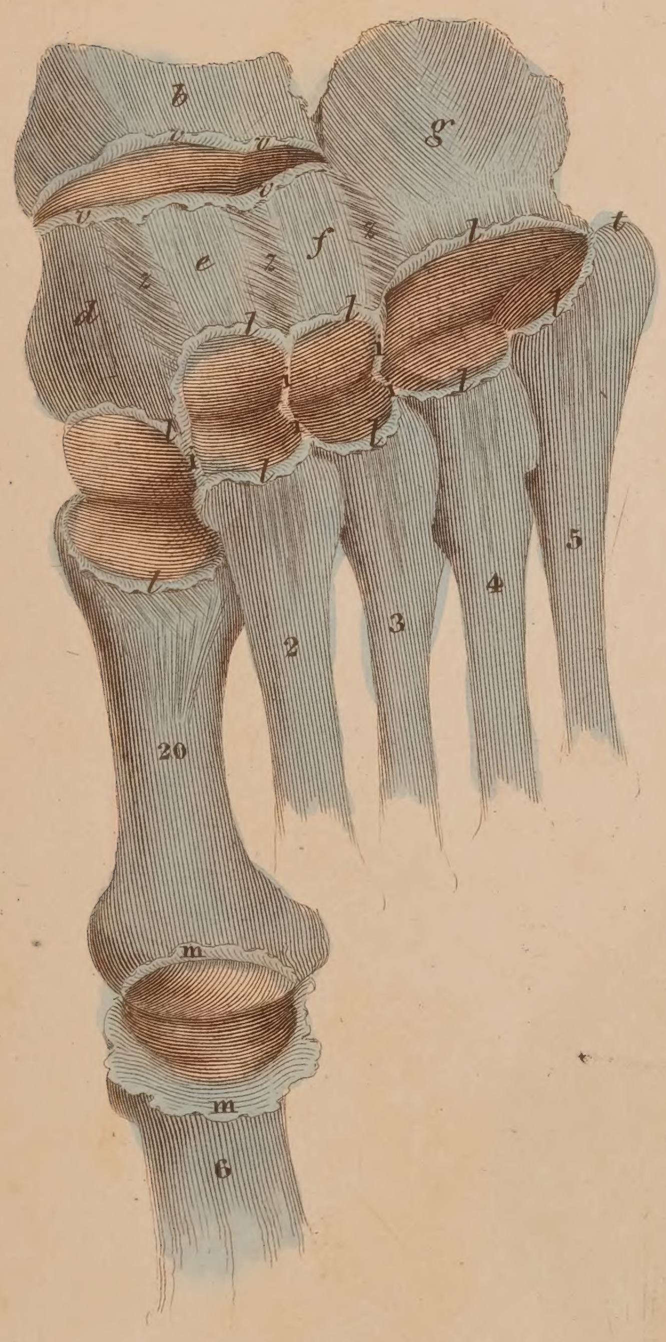

b
g
e
f
d
l
2
3
4
5
20
m
m
6

PLATE XXII.

Fig. 1.

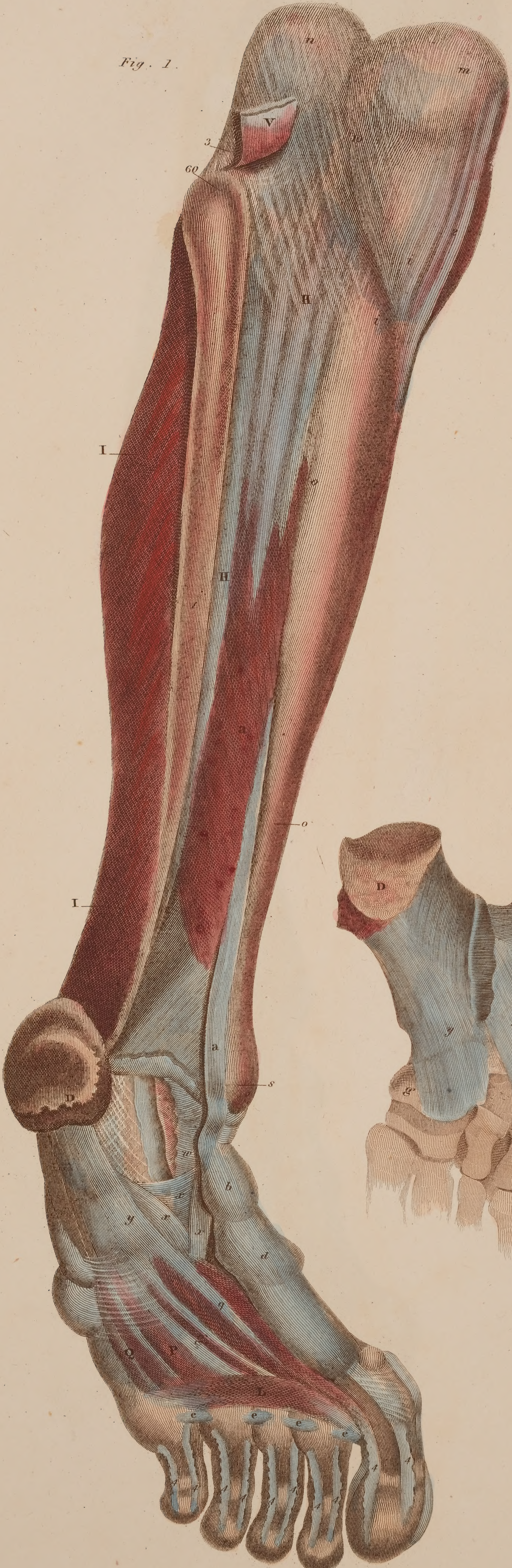
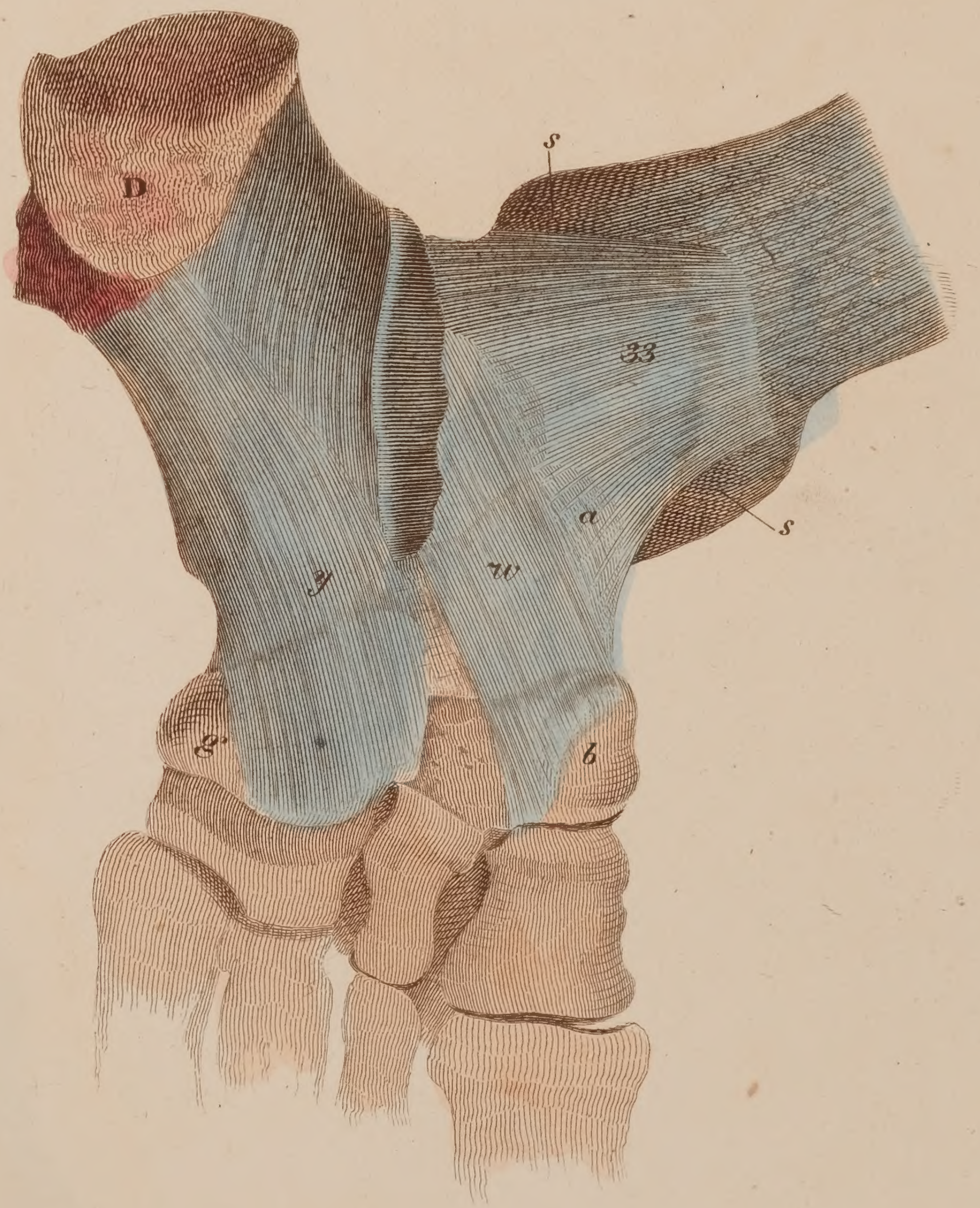
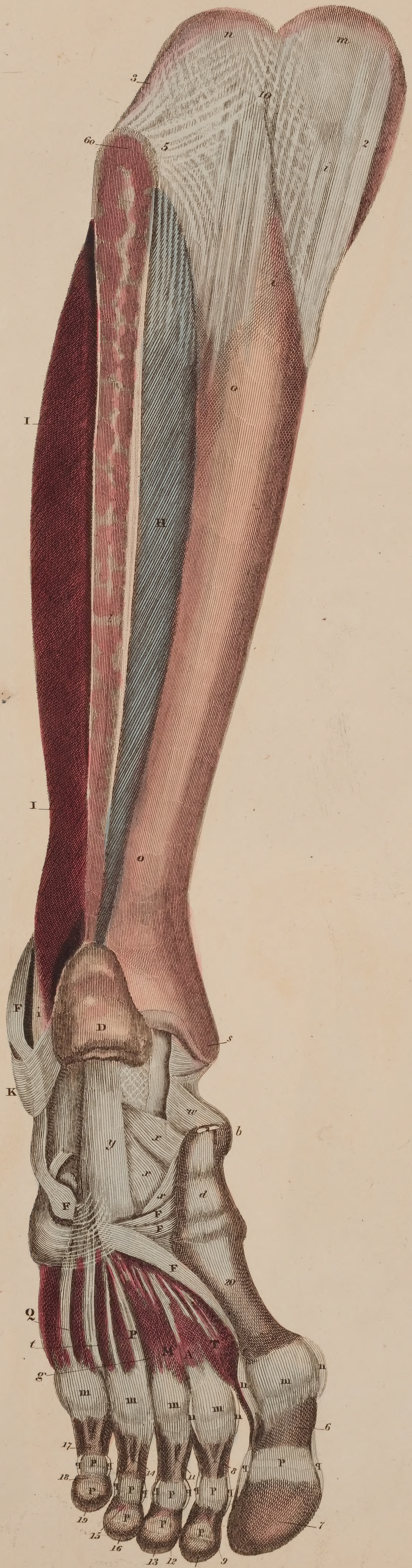

n
m
V
3
60
w
z
t
H
i
I
o
H
l
a
o
I
D
a
s
w
x
y
x
x
b
d
q
Q
P
c
L
e
e
e
e
4
4
4
4
4
4
4
4
4
4

Fig. 2.


D
s
33
a
s
y
w
g
b

Engraved by W.H. Lizars.

PLATE XXIII.


n
m
3
10
6o
5
2
i
i
o
I
H
l
I
o
F
i
D
s
K
w
b
y
x
x
x
d
F
F
F
F
20
Q
P
t
M
A
T
g
m
m
m
m
m
n
n
n
n
6
17
p
p
18
14
11
8
p
p
p
p
p
p
p
p
p
p
19
15
16
13
12
10
9
7

Engraved by W. H. Lizars.

PLATE XXIV.

Fig. 1.

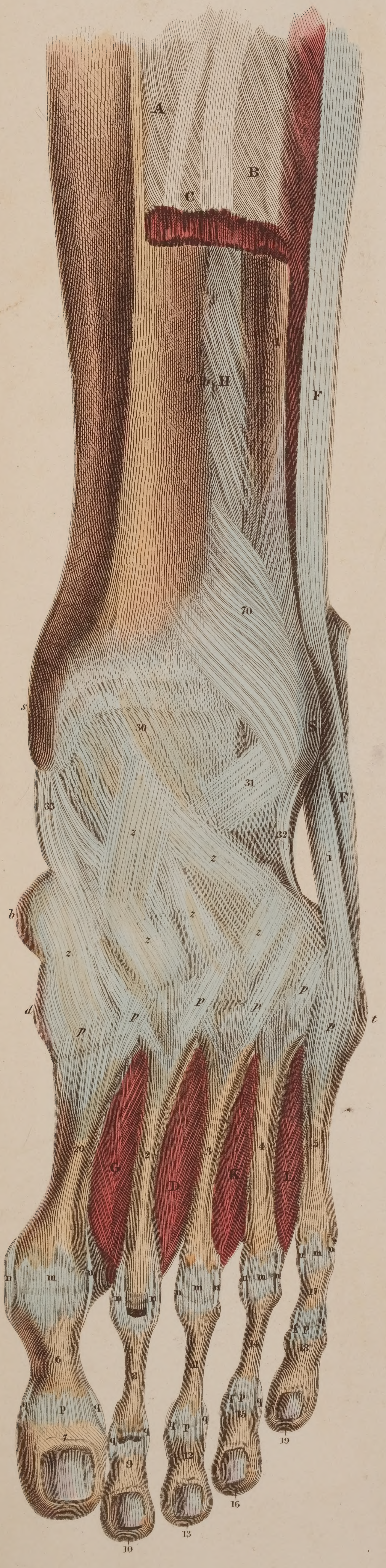

A
B
C
1
o
H
F
70
s
30
S
31
33
F
32
i
z
z
z
z
b
z
z
z
d
p
p
p
p
p
p
t
20
2
3
4
5
G
D
K
L
n
m
n
n
n
n
m
n
n
m
n
m
n
17
p
18
14
6
8
11
q
p
q
q
p
q
q
p
q
15
19
7
9
12
16
13
10

Fig. 2.

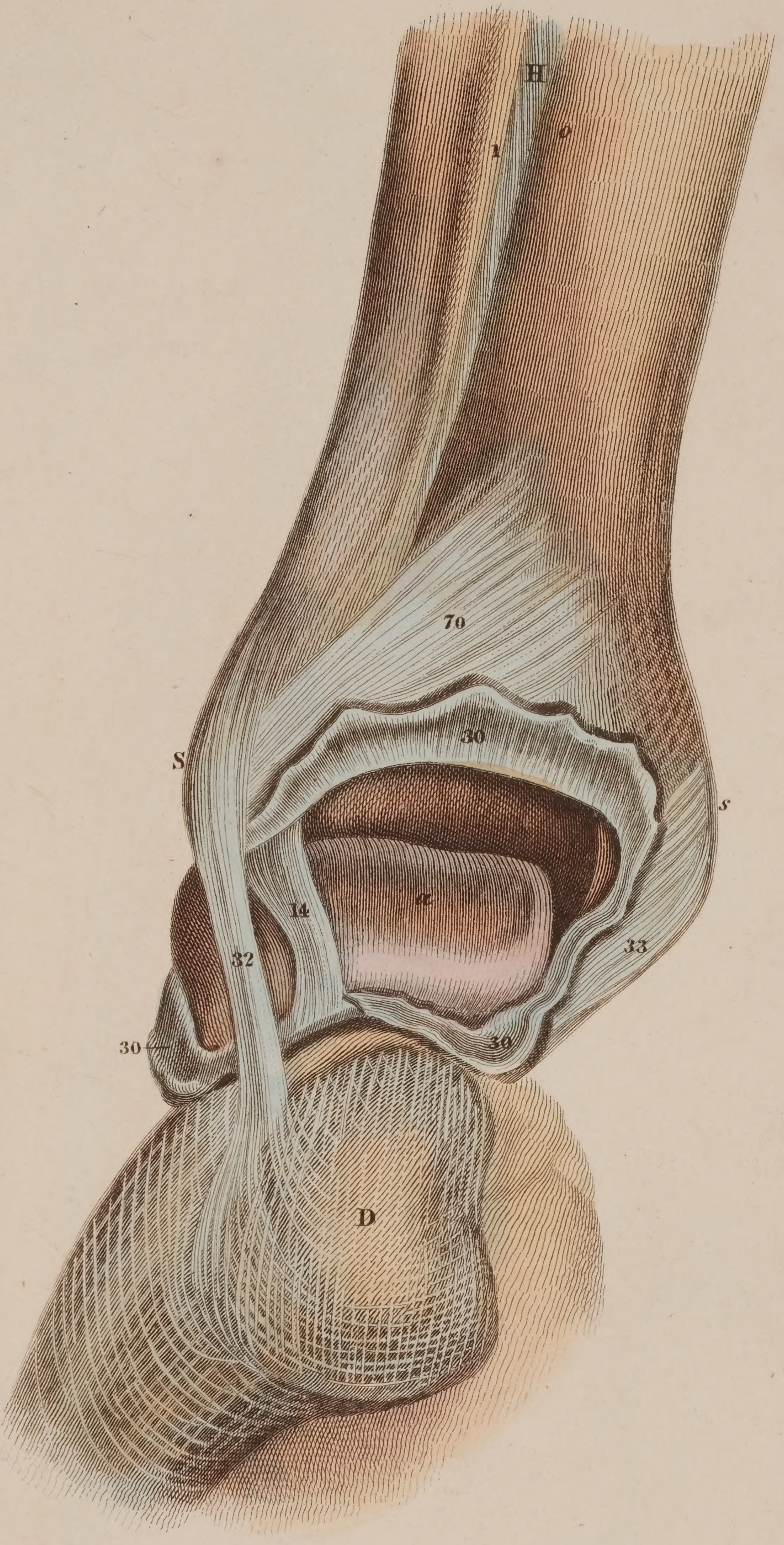
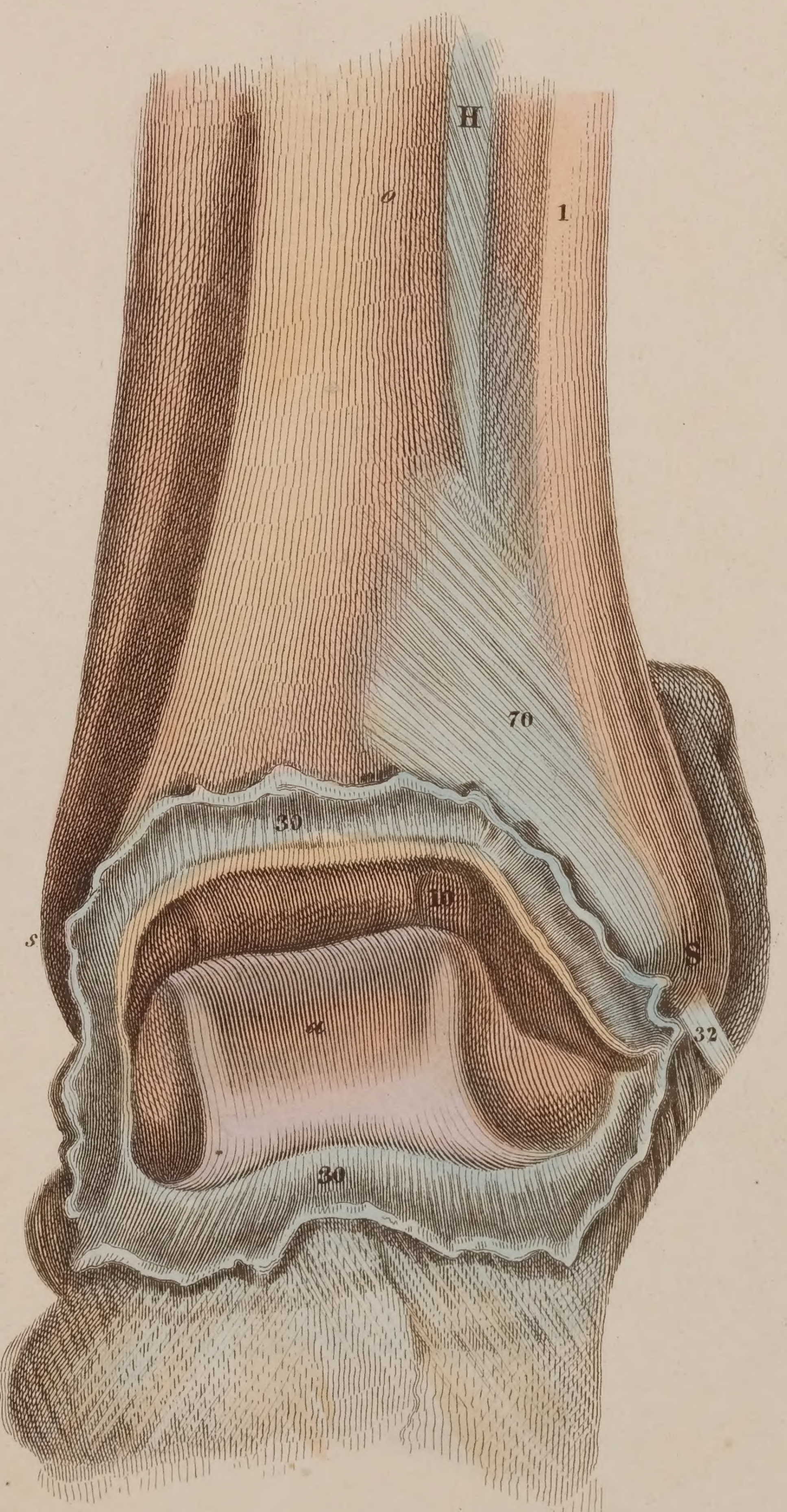
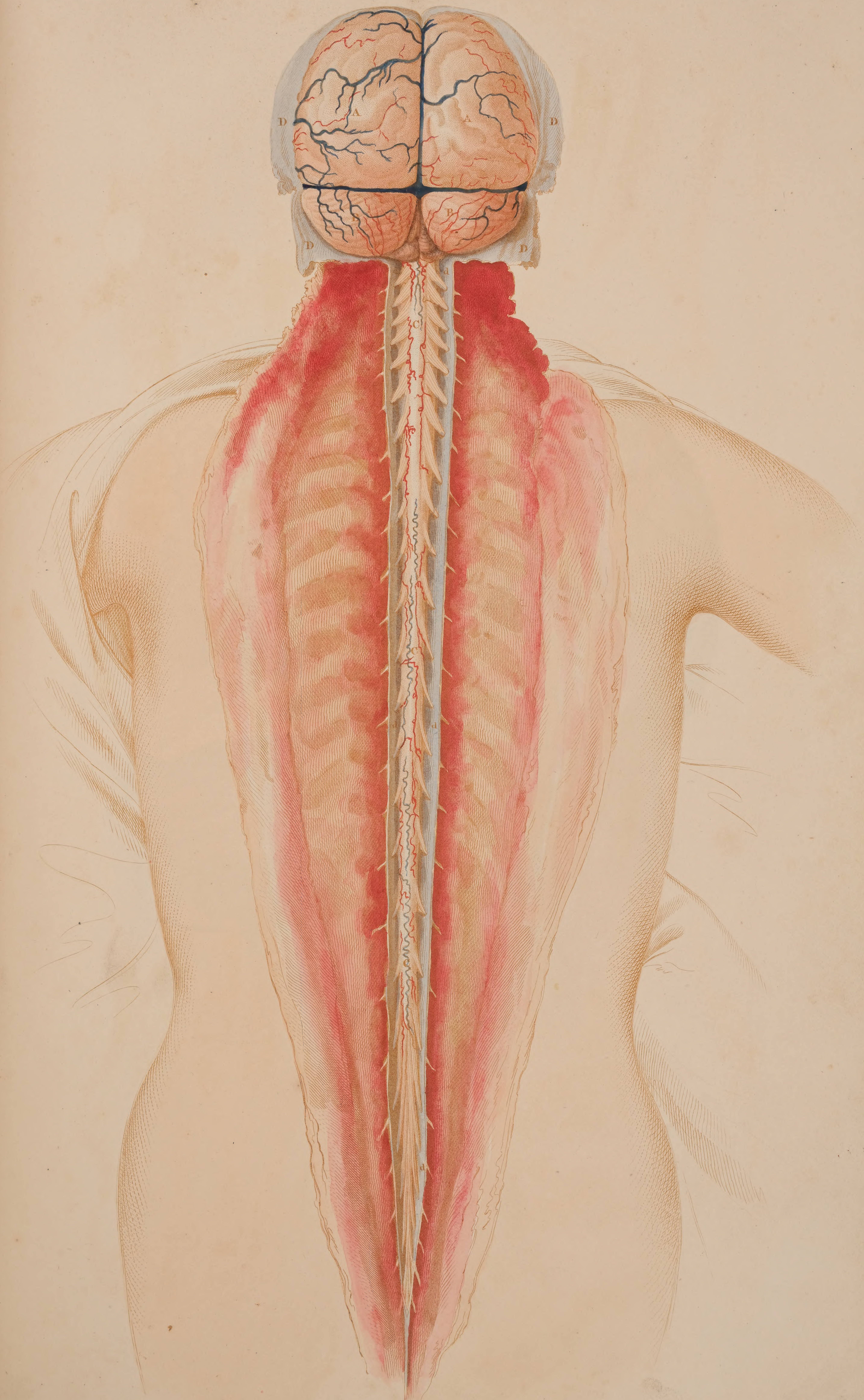

H
1
o
70
S
30
s
a
14
32
33
30
30
D

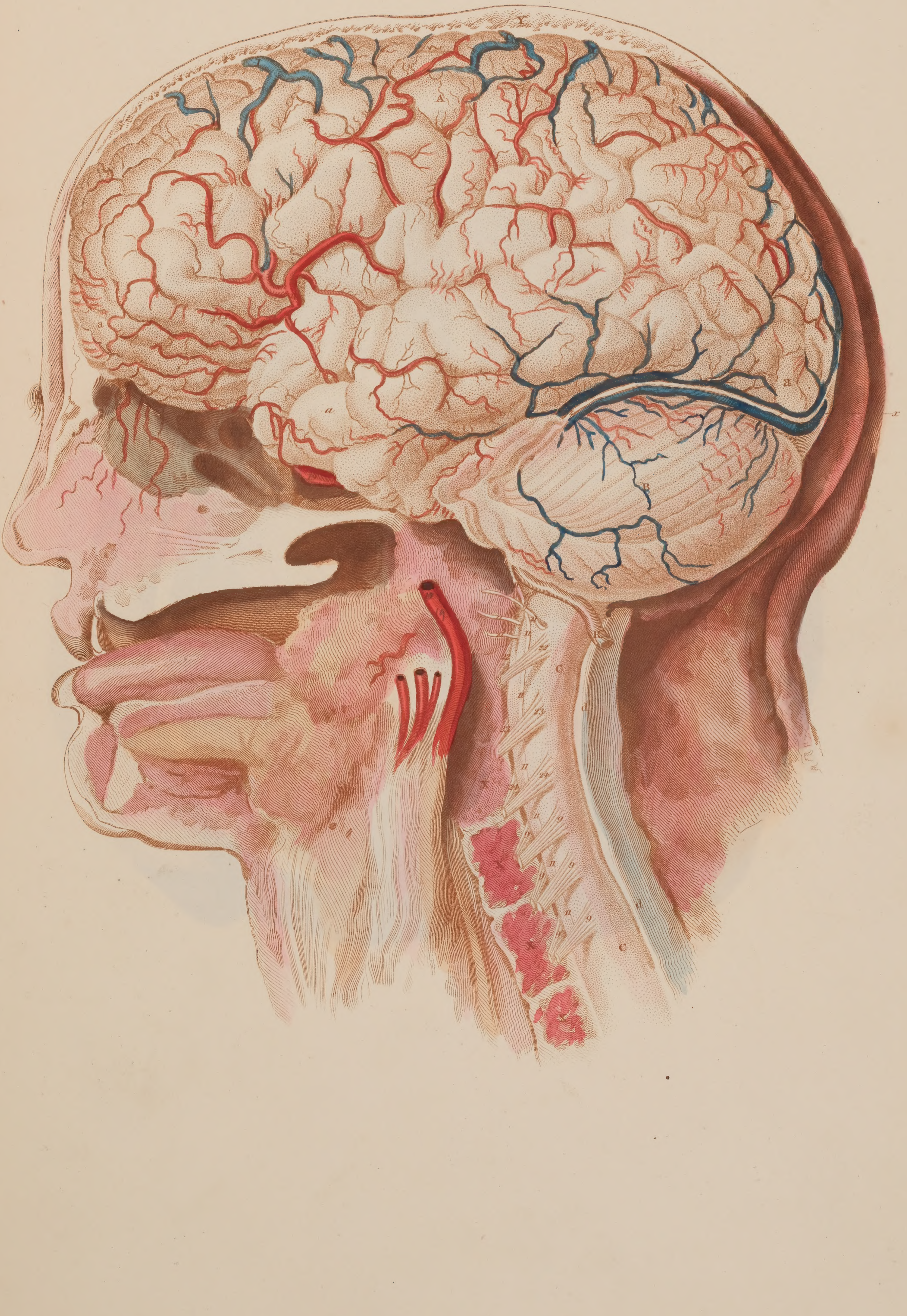
Fig. 3.


H
o
1
70
30
10
s
S
a
32
30

Engd. by W.H.Lizars

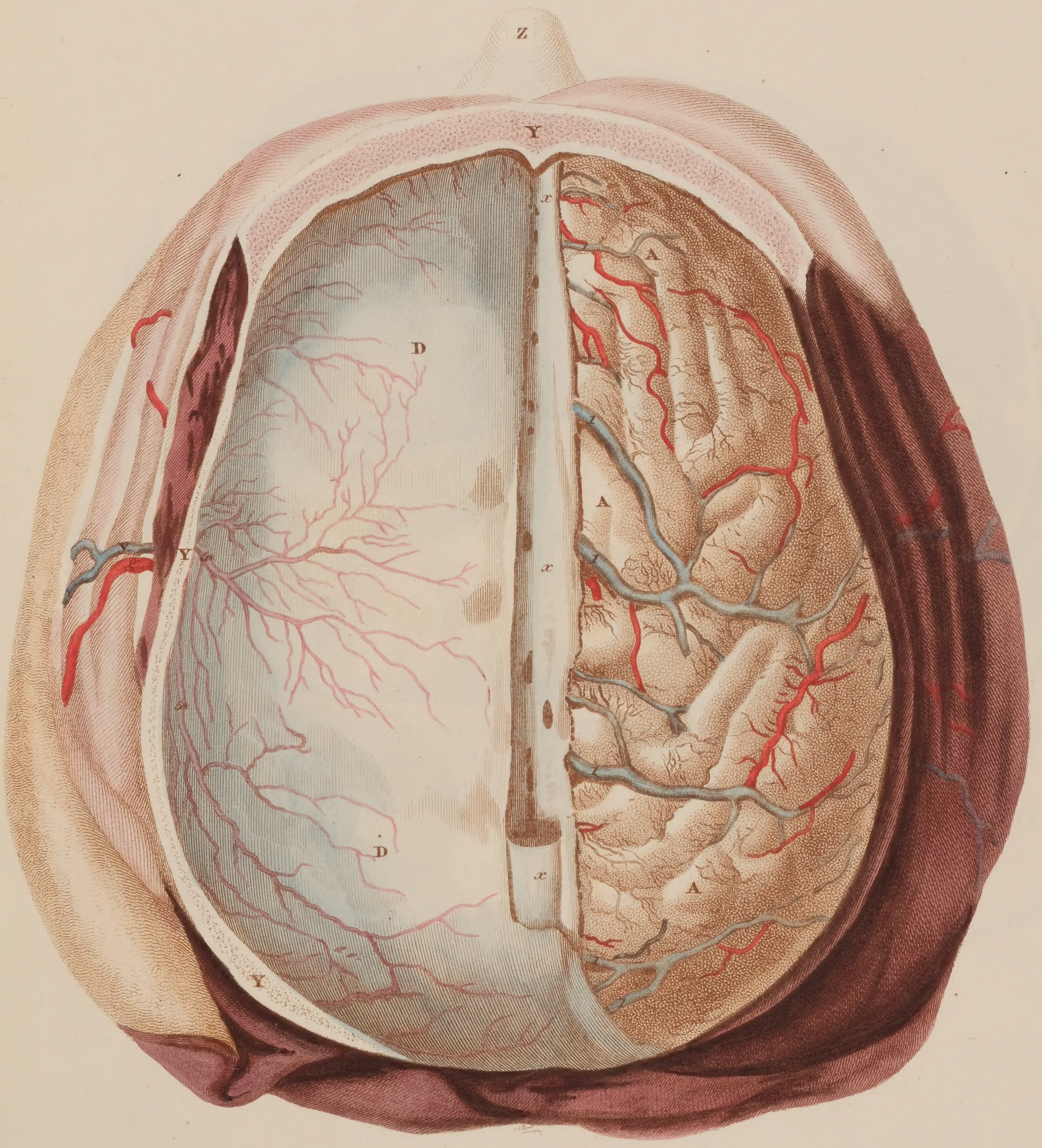
PLATE I.


D
A
A
D
B
B
D
D
d
C
C
d
d
C
d


Y
N
A
a
a
R
x
B
R
C
d
X
X
X
X
C
d
C
11
21
22
23
24
9

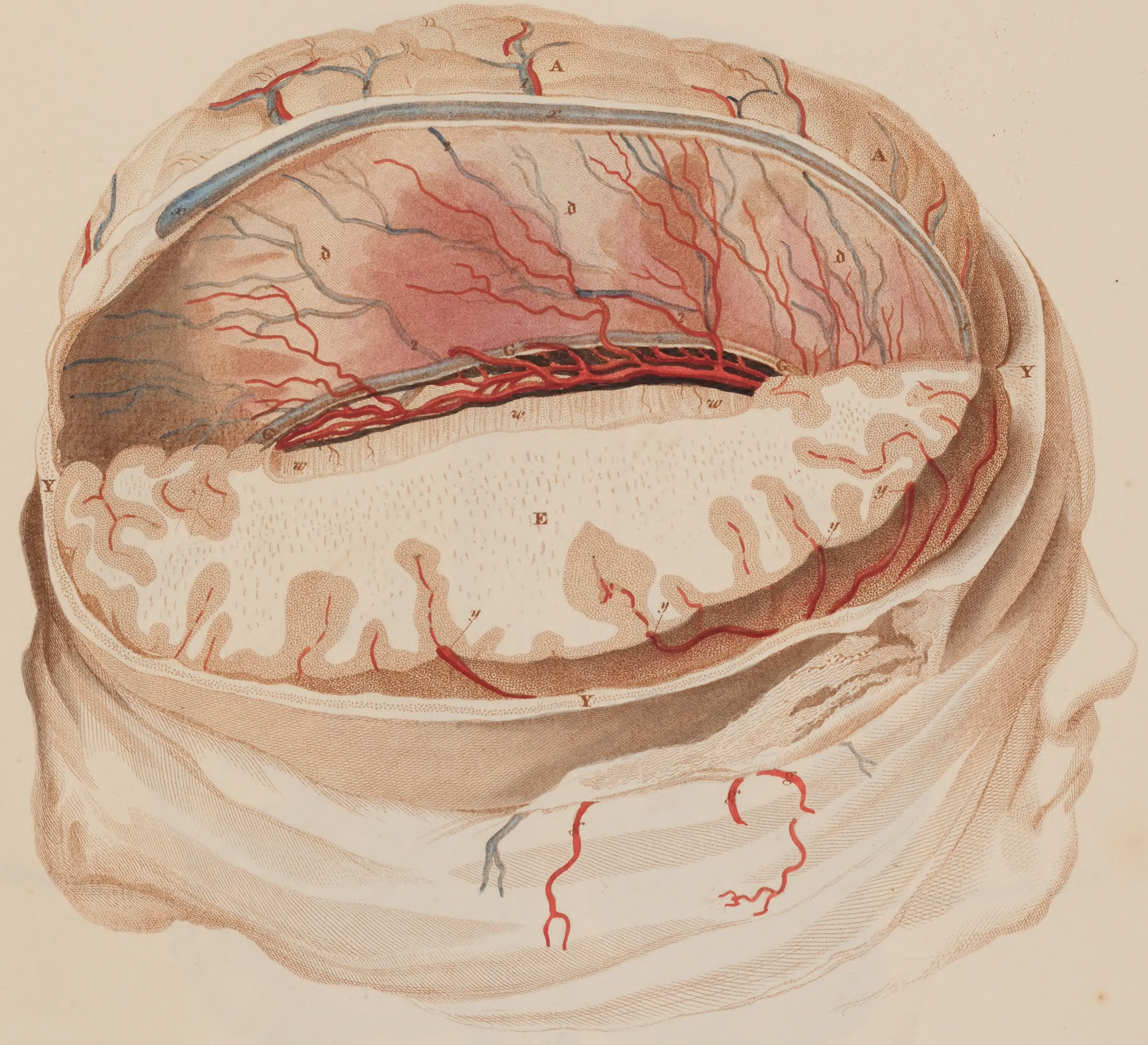
Engraved by W.H. Lizars

PLATE III.


Z
Y
x
A
D
A
Y
x
D
x
A
Y

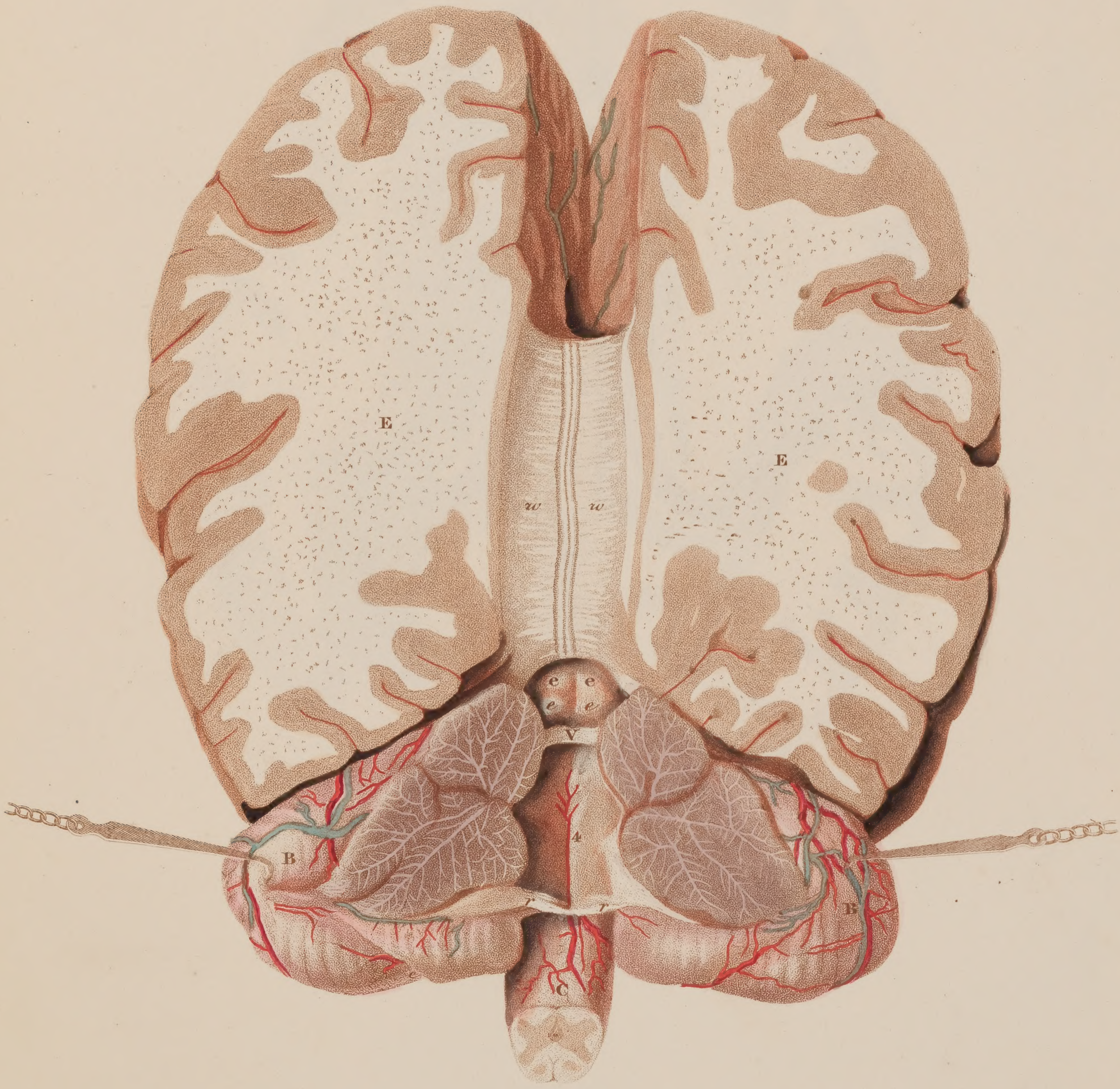
Eng^{d} by W.H.Lizars.

PLATE IV.


A
A
x
x
1
1
D
D
D
D
2
2
G
G
G
w
w
w
w
Y
Y
Y
E
y
y
y
y
y

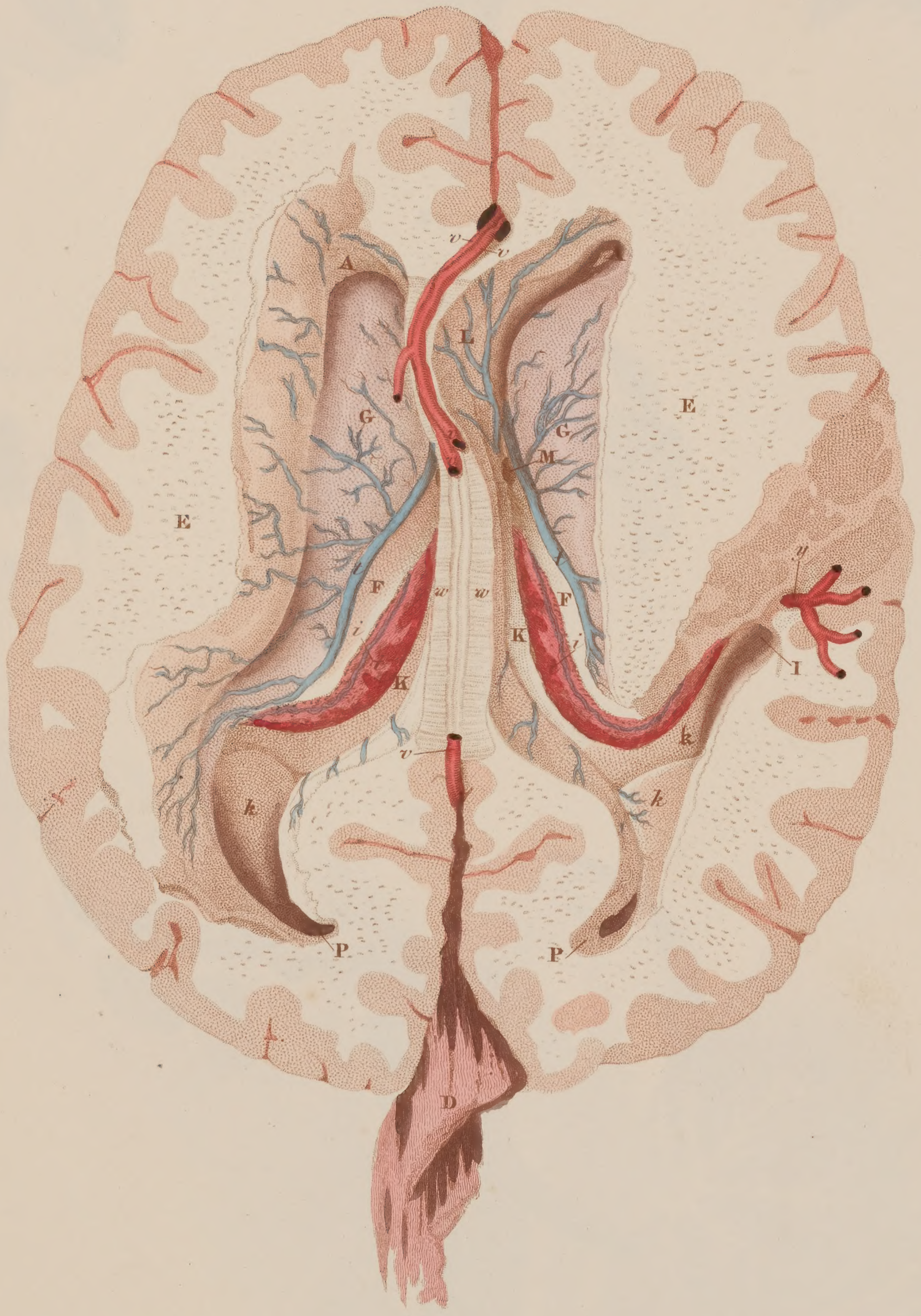
Eng^{d} by W.H Lizars.

PLATE V.


E
E
w
w
e
e
e
e
V
4
B
B
r
r
c
C

Engd by W. H. Lizars.

PLATE VI.


v
v
A
L
G
G
M
E
E
F
F
w
w
i
i
K
K
k
k
k
u
I
v
P
P
D

Engd by W.H. Lizars

PLATE VII.

Fig. 1.

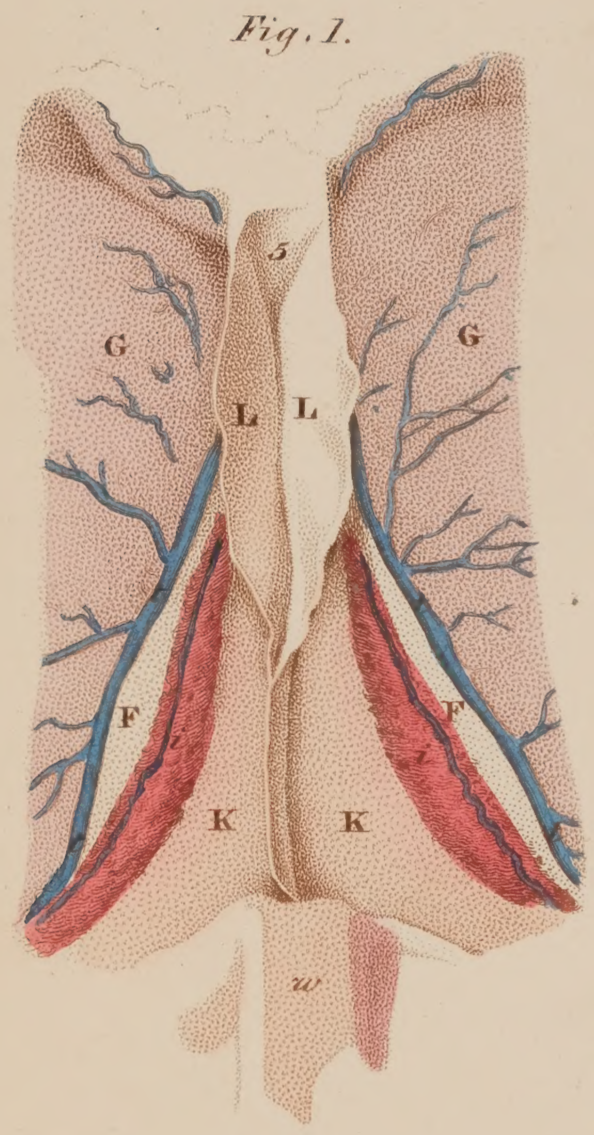

5
G
G
L
L
F
F
K
K
w

Fig. 2.

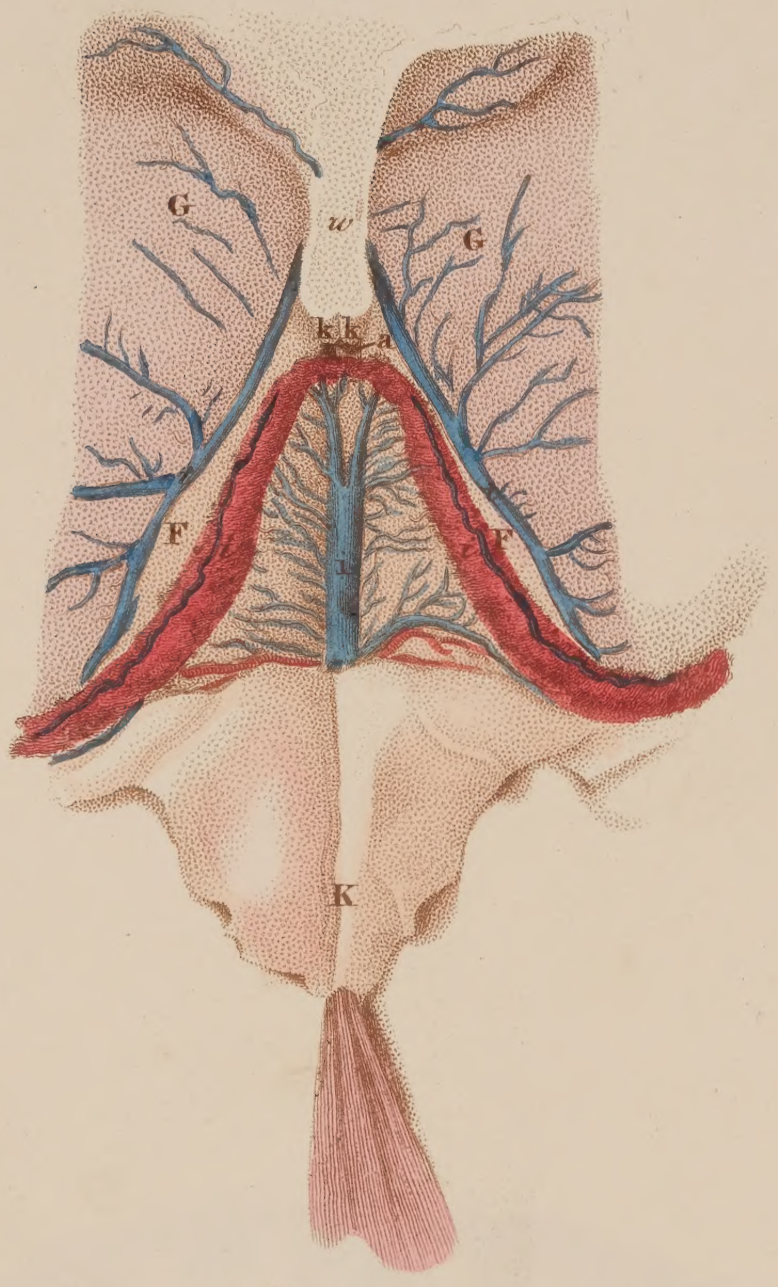

G
w
G
k k
a
F
L
F
K

Fig. 3.

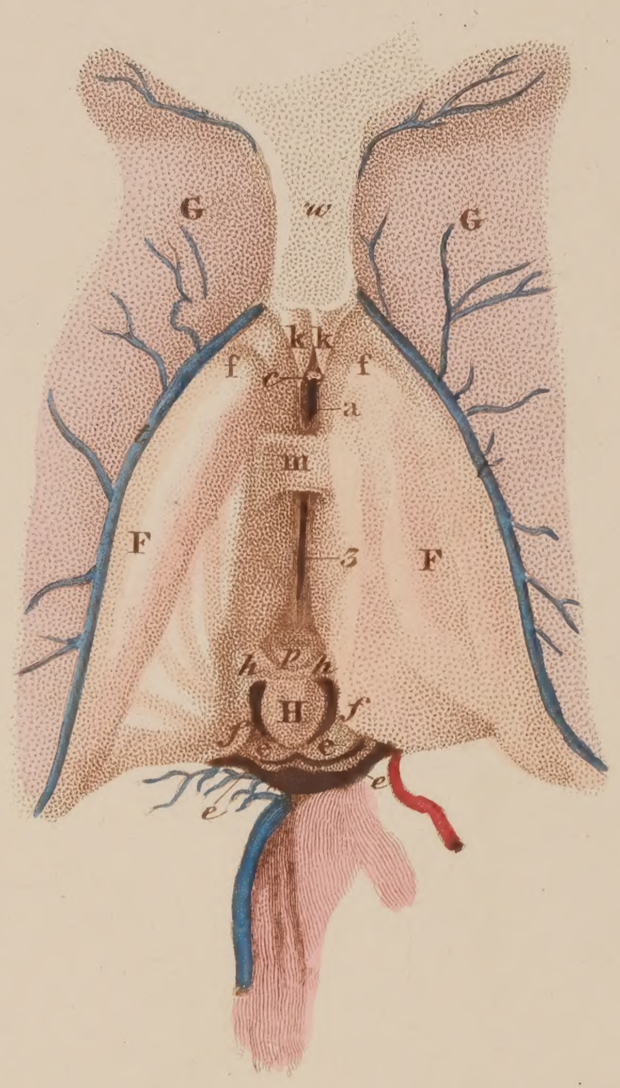

G
w
G
k k
f
c
f
a
m
F
3
F
h
p
h
H
f
f
e
e
e
e

Fig. 4.

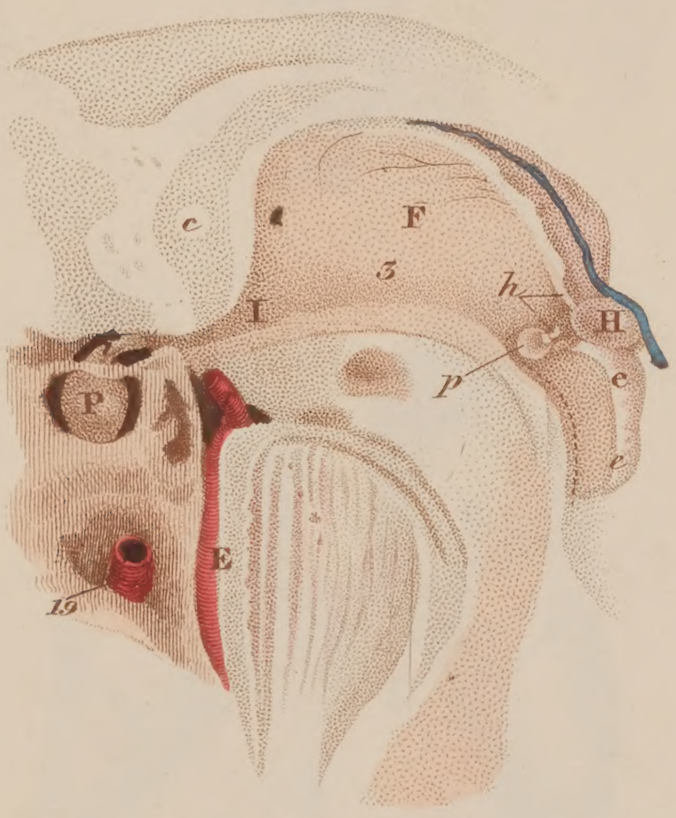

c
F
3
h
I
H
P
p
e
e
E
19

Fig. 5.

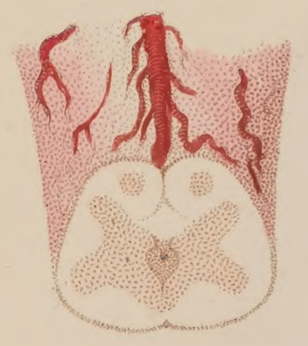


Fig. 6.

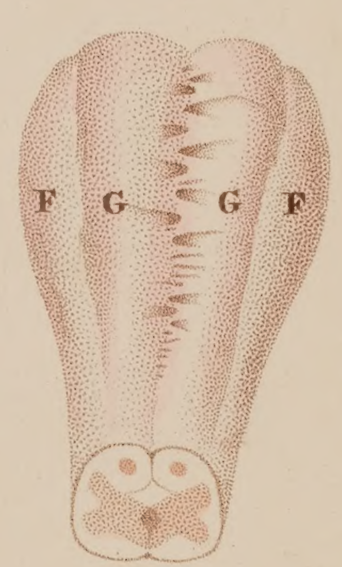
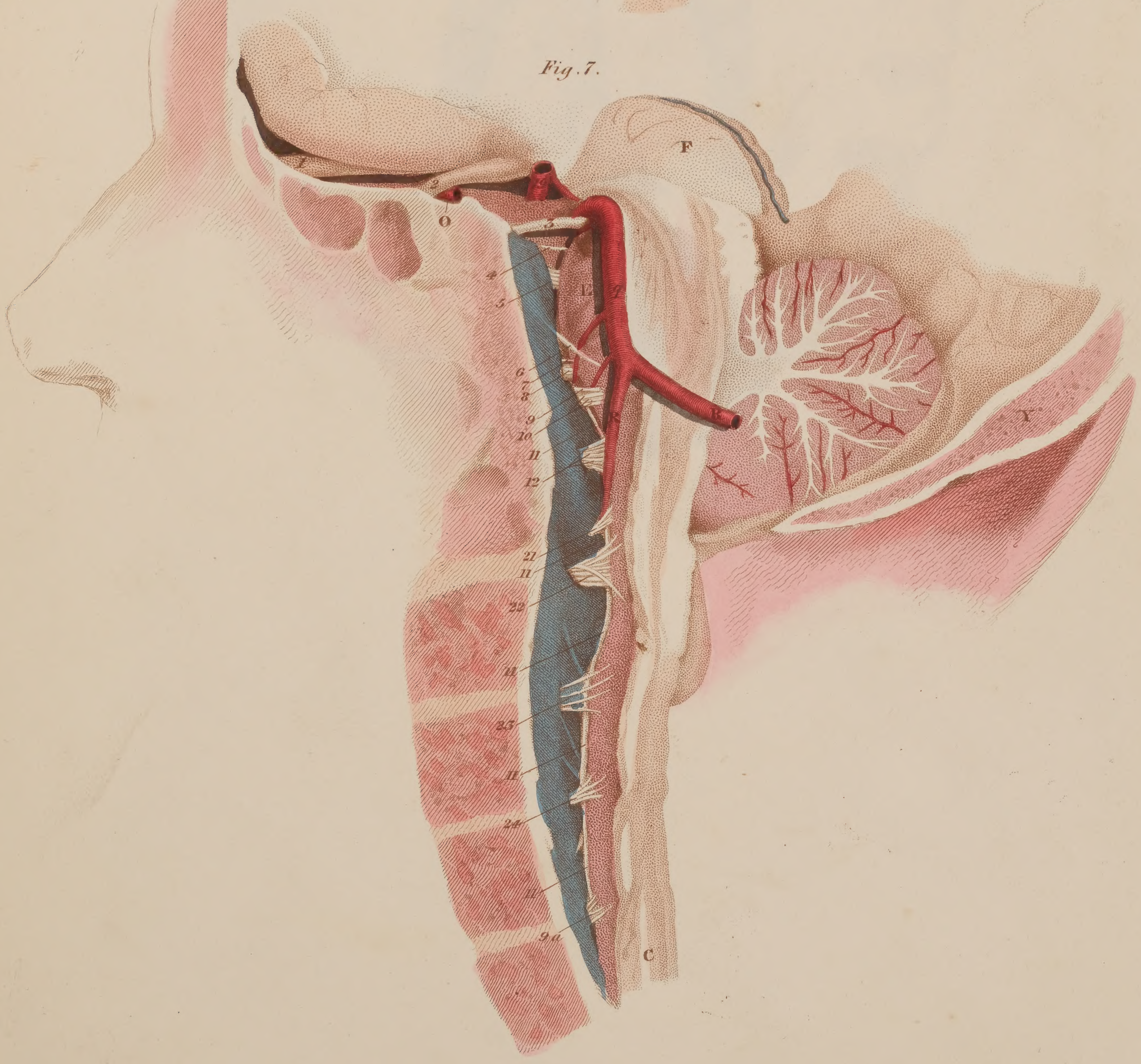
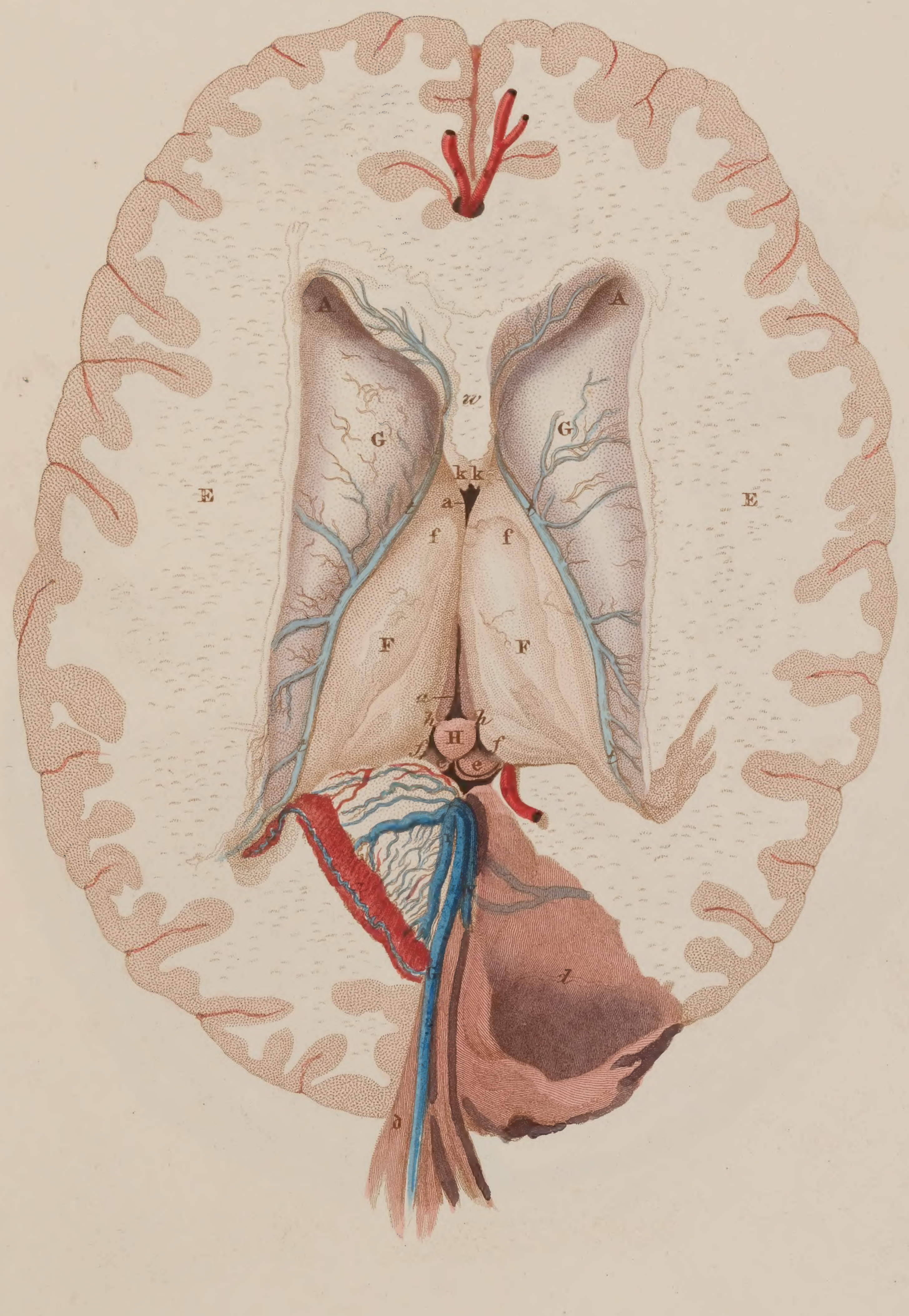


Fig. 7.


1
2
O
19
3
F
4
5
L
9
6
7
8
9
10
11
12
R
K
Y
21
11
22
11
23
11
24
11
9a
C

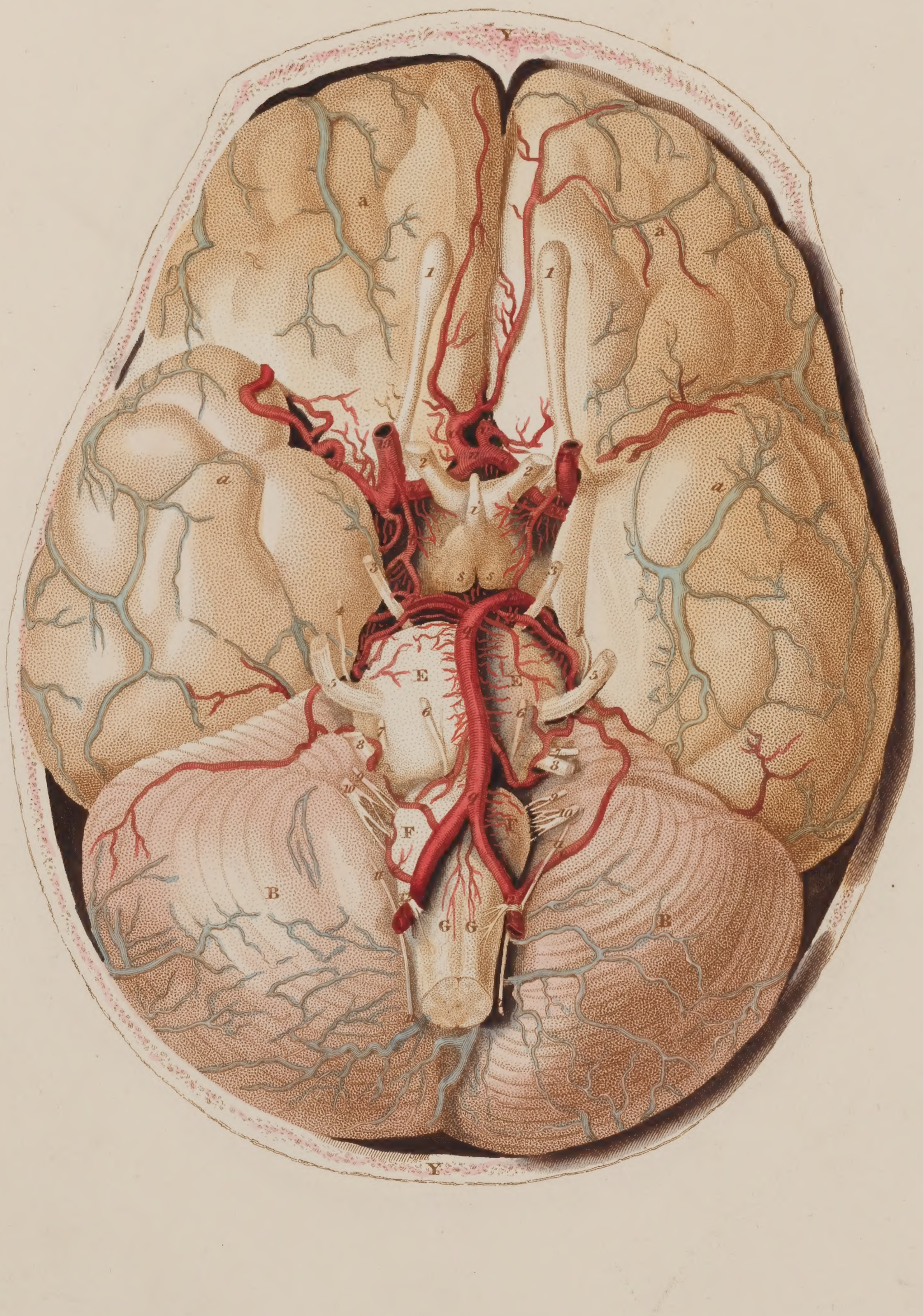
Eng^d. by W.H.Lizars.

PLATE VIII.

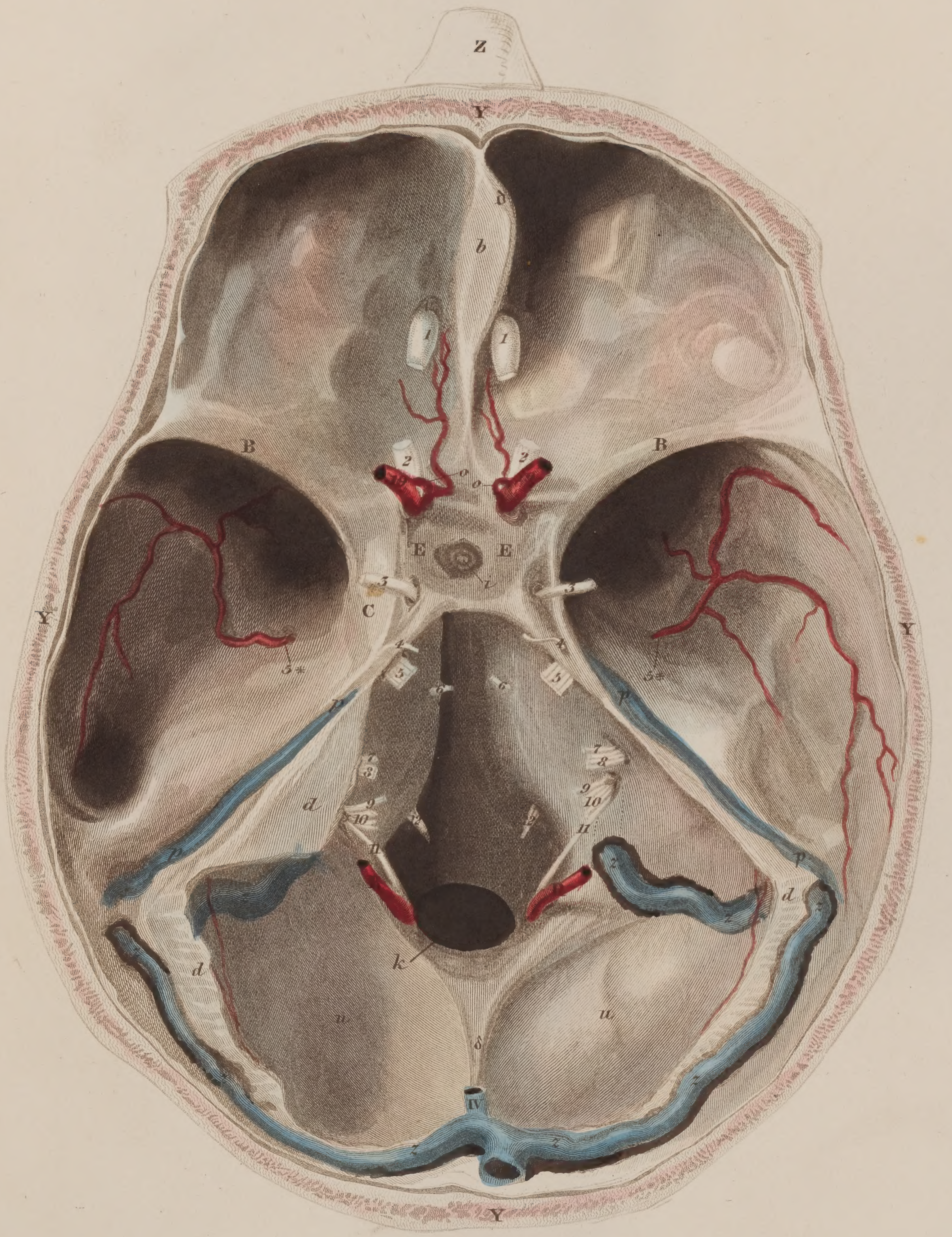

A
A
w
G
G
E
kk
a
E
f
f
F
F
a
h
h
H
f
f
e
e
d
b

Engraved by W.H.Lizars.

PLATE X.


Y
a
a
a
a
1
1
2
2
1
3
3
S
S
4
4
5
5
E
E
6
6
7
7
8
8
9
9
10
10
11
11
F
F
G
G
B
B
Y

Engraved by W.H. Lizars.


Z
Y
δ
b
1
1
B
2
2
o
o
B
E
E
i
3
3
C
Y
Y
3*
3*
4
4
5
5
6
6
p
p
7
8
7
8
9
10
9
10
12
12
11
11
d
d
z
k
u
u
δ
IV
z
z
Y

Engd. by W.H. Lizars.

PLATE XII.

Fig. 1.

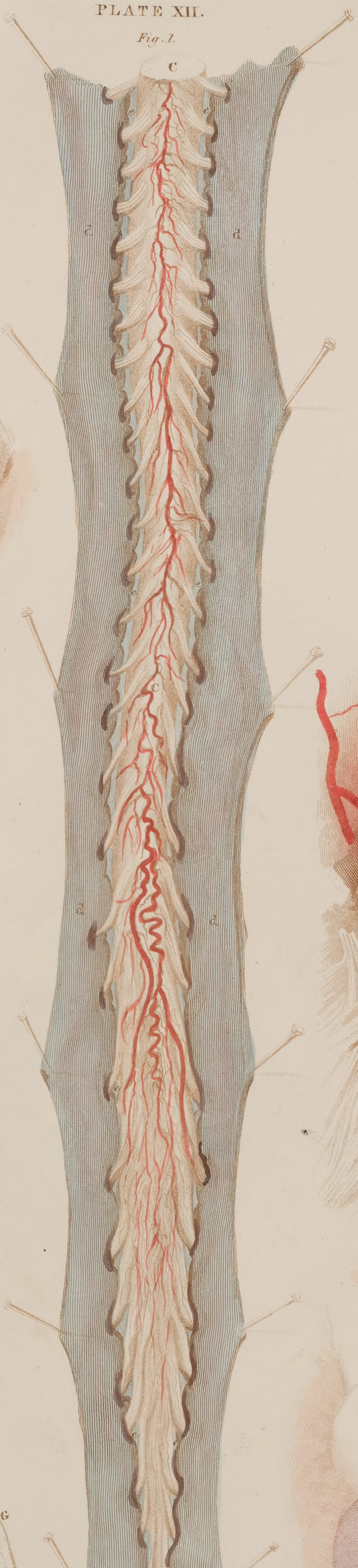

C
e
e
d
d
C
e
d
d
d
d

Fig. 3.

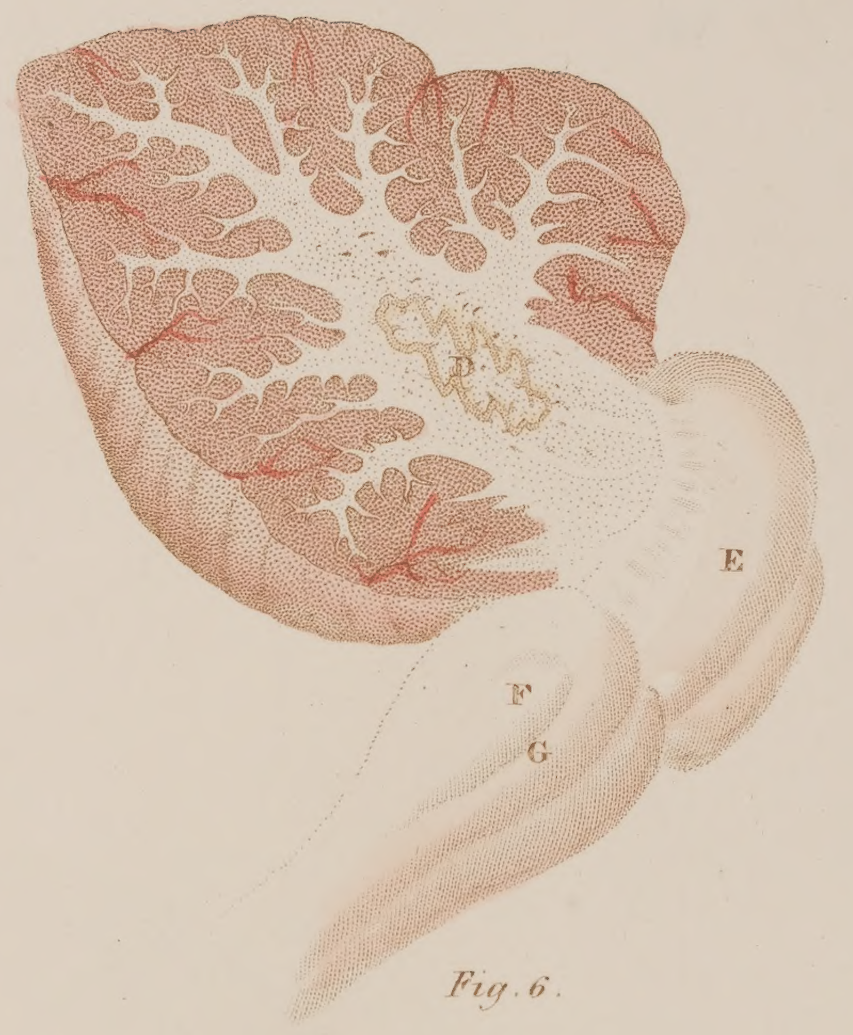


Fig. 5.

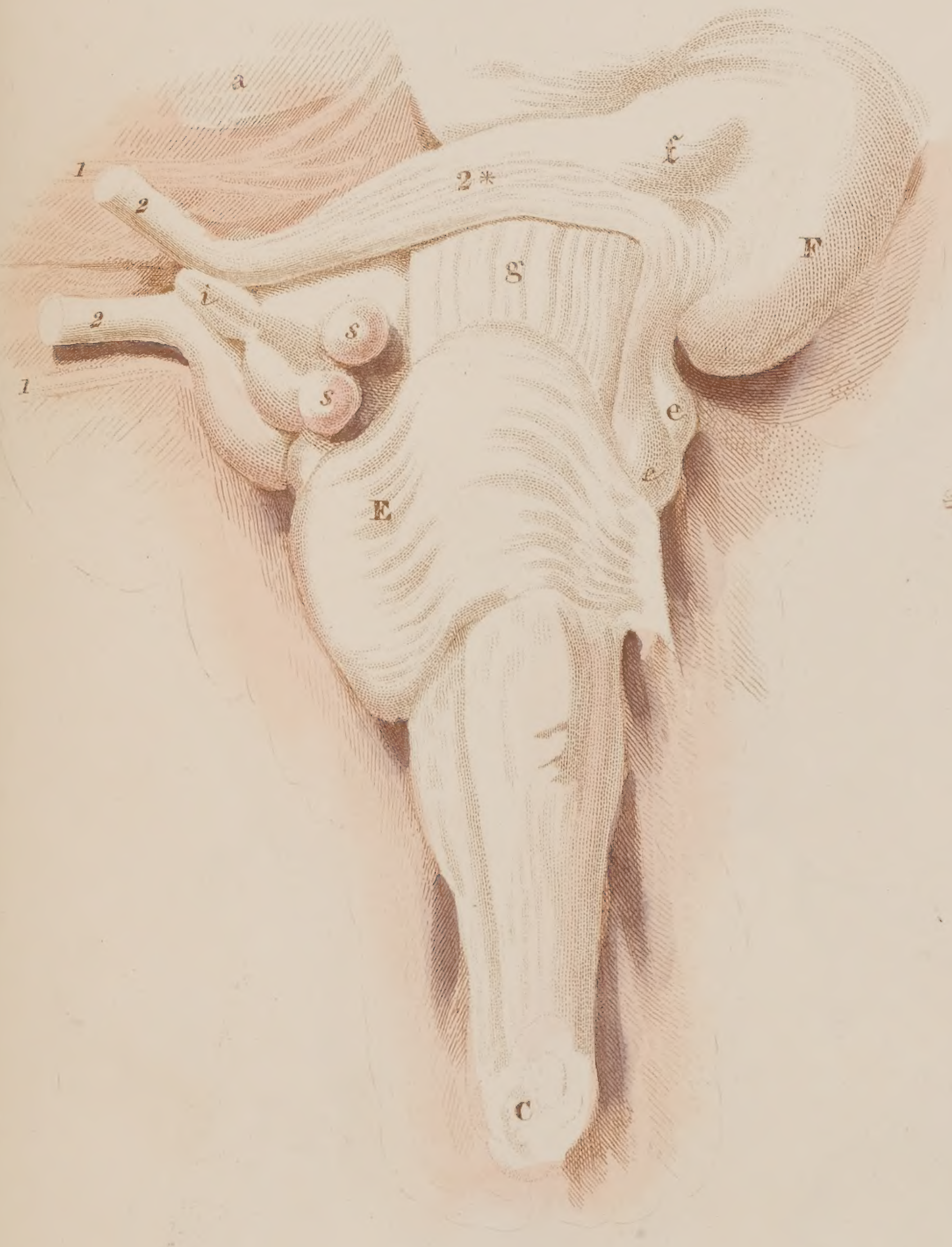

a
1
2
2*
ε
F
2
1
1
S
s
s
e
E
C

Fig. 6.

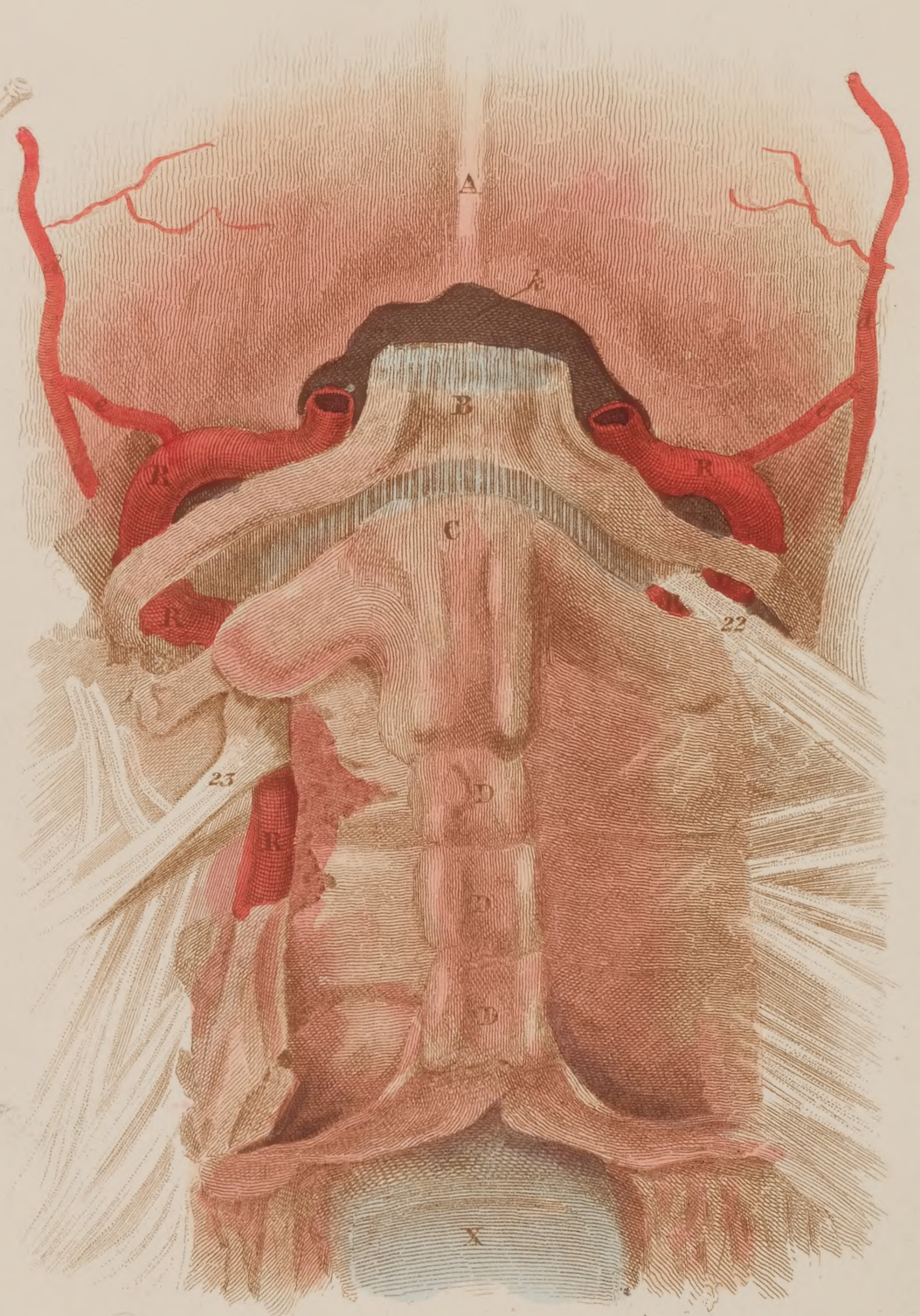

A
k
B
R
R
C
R
R
22
23
R
D
D
D
X

Fig. 4.

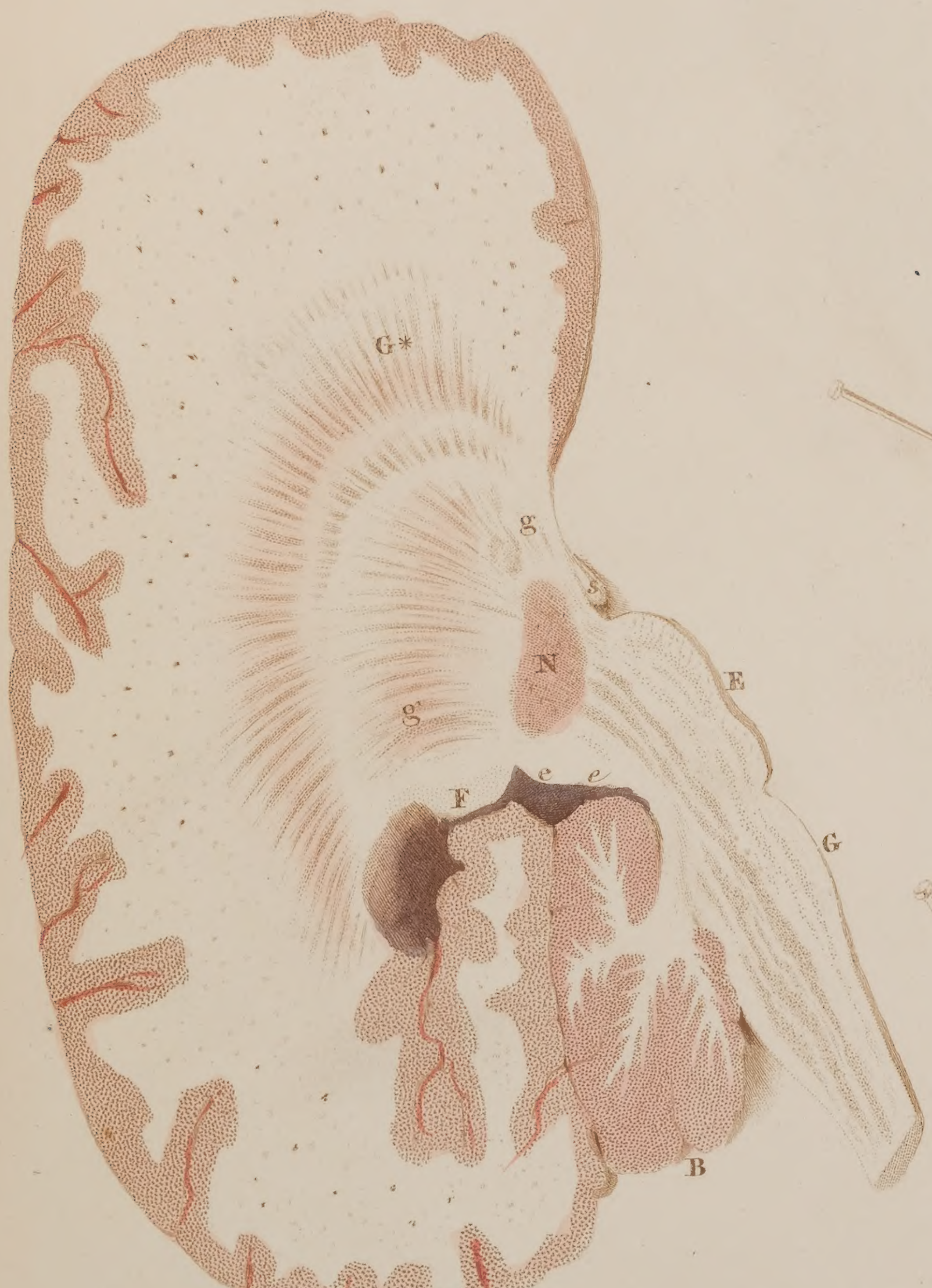

G*
g
N
E
g
F
e
e
G
B

Fig. 2.

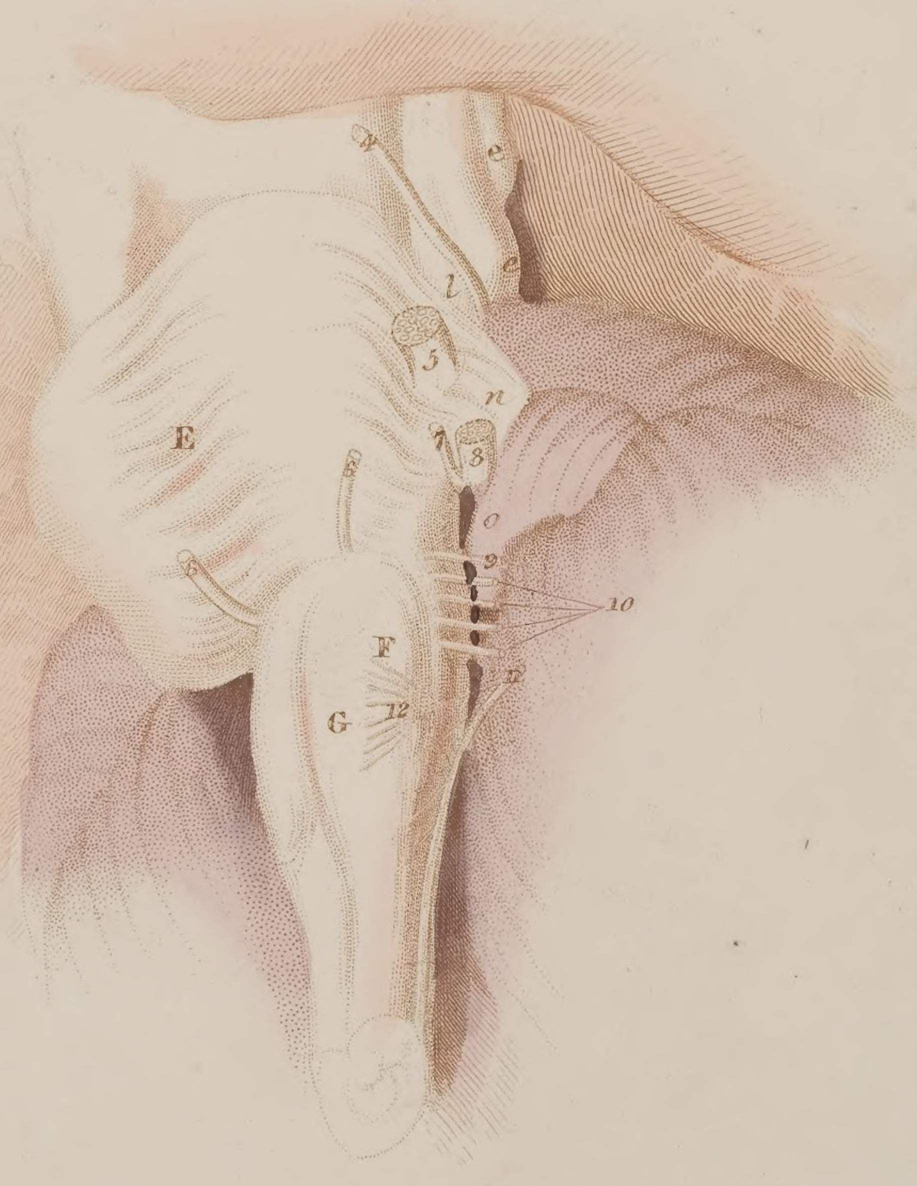

e
e
l
5
n
E
7
8
o
9
10
F
G
12

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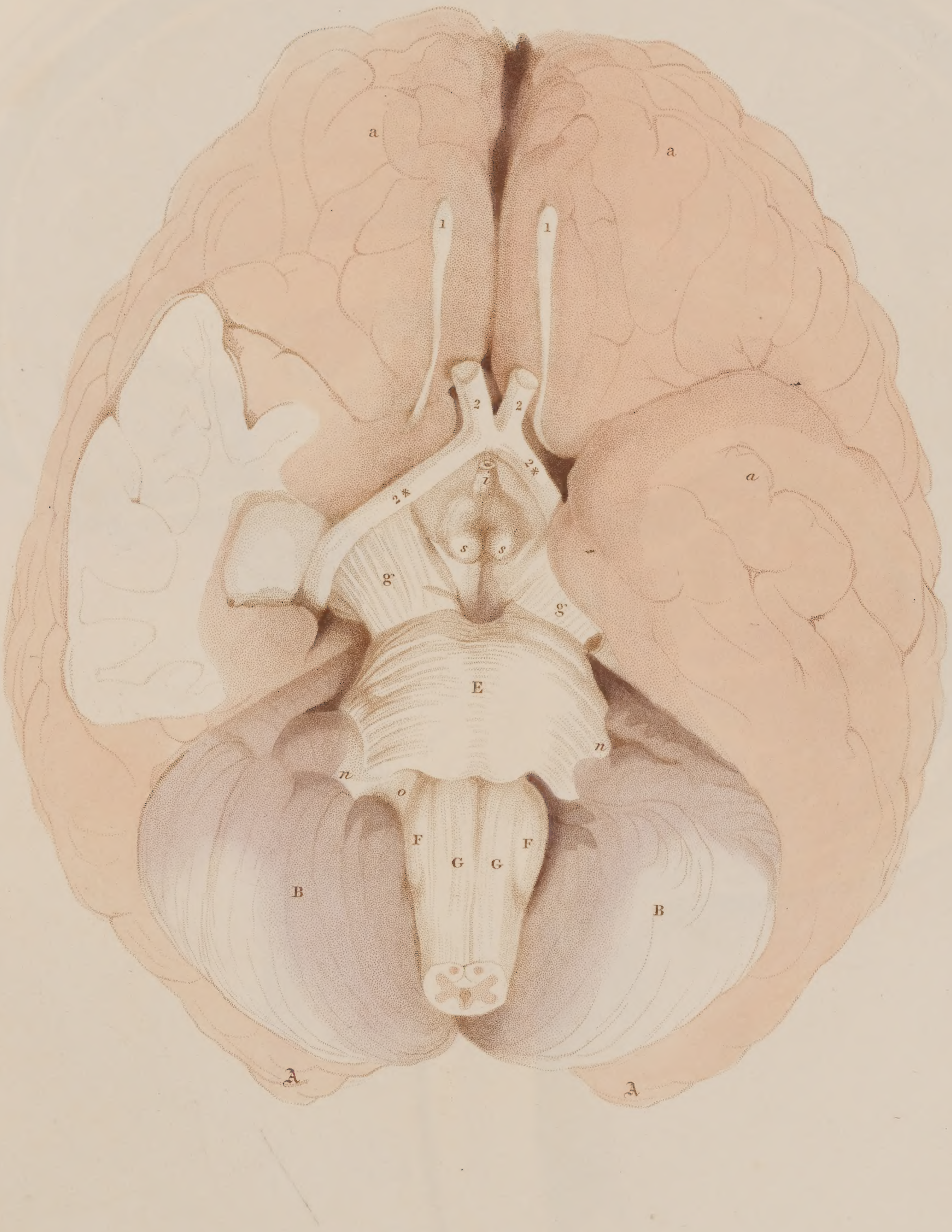
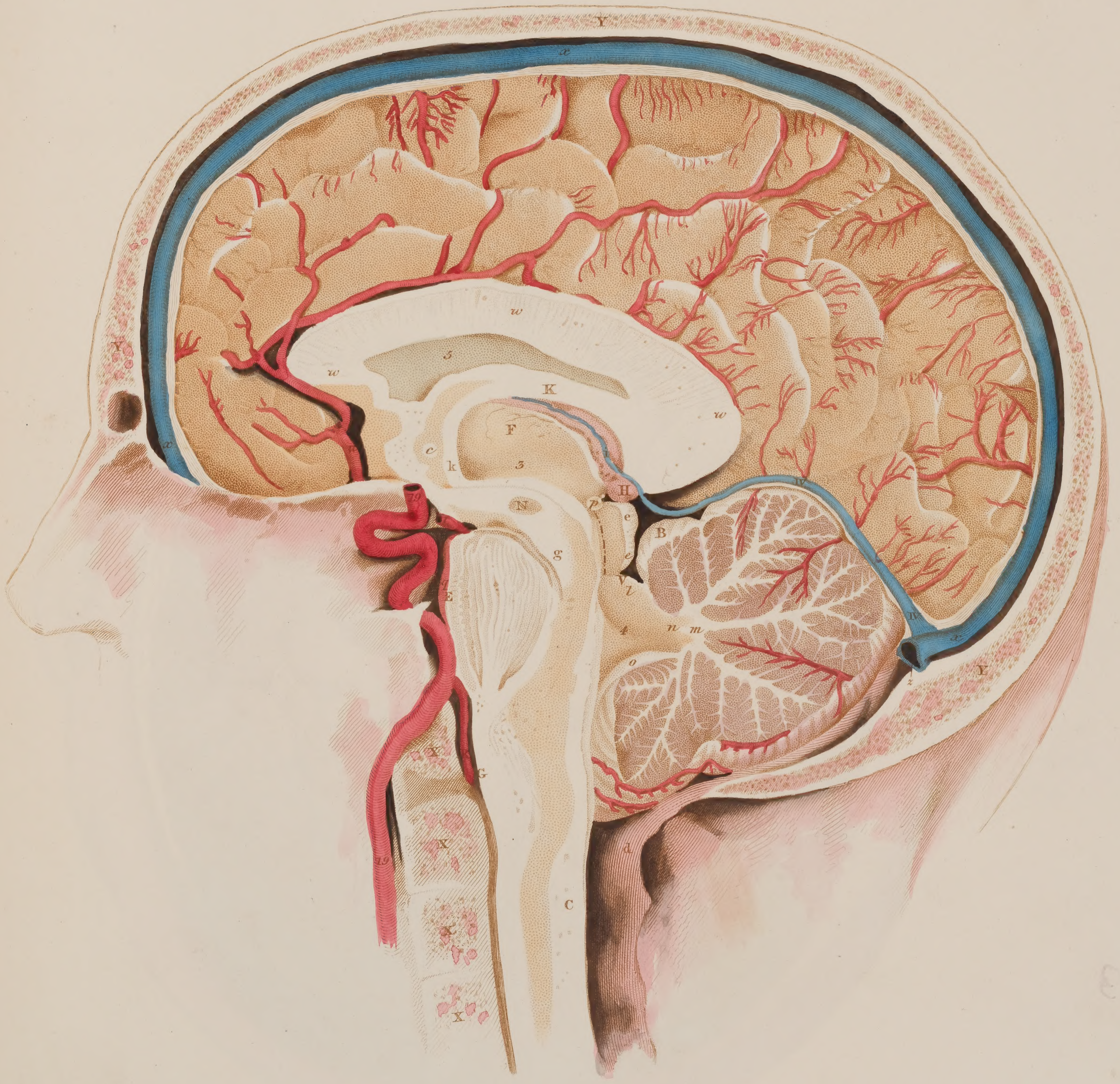
PLATE XIII.


a
a
1
1
2
2
2*
l
2*
a
s
s
g
g
E
n
n
o
F
F
G
G
B
B
A
A

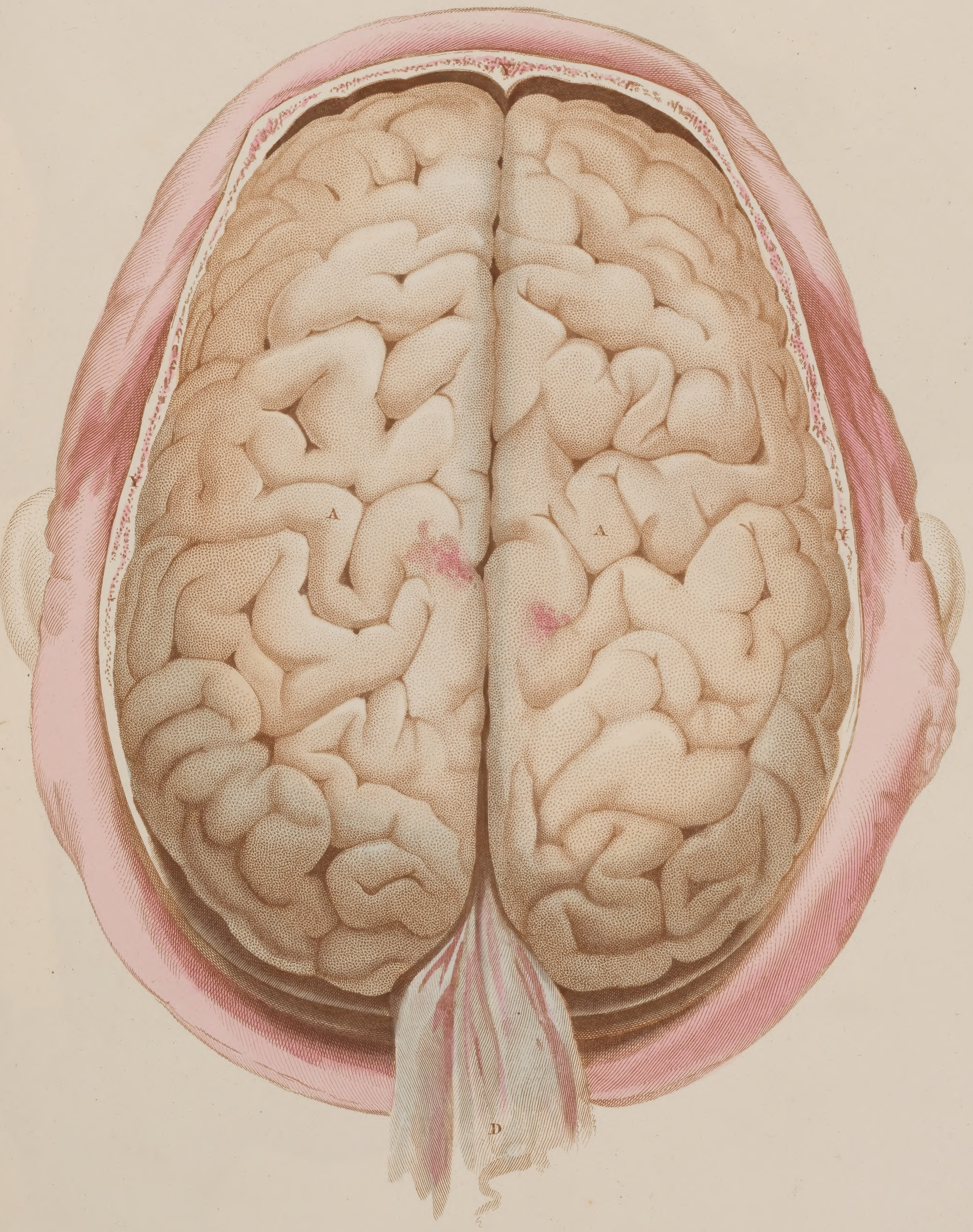
Engraved by W. H. Lizars.

PLATE XIV.

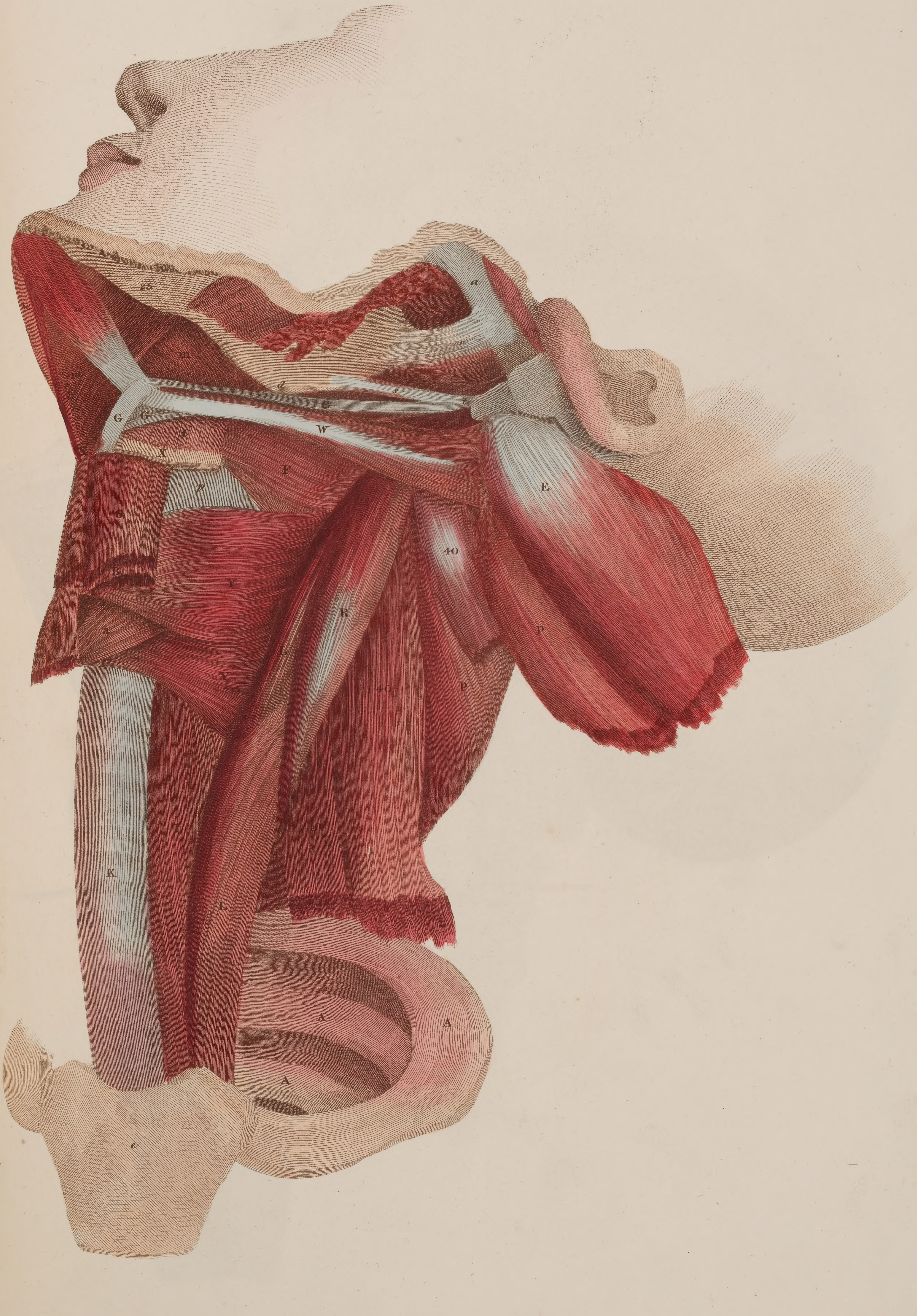

Y
x
Y
x
w
5
w
K
w
F
c
k
3
H
N
p
e
B
g
e
V
l
IV
4
n m
o
IV
z
Y
19
E
X
G
X
d
19
C
X
X

Eng^{d}. by W.H.Lizars

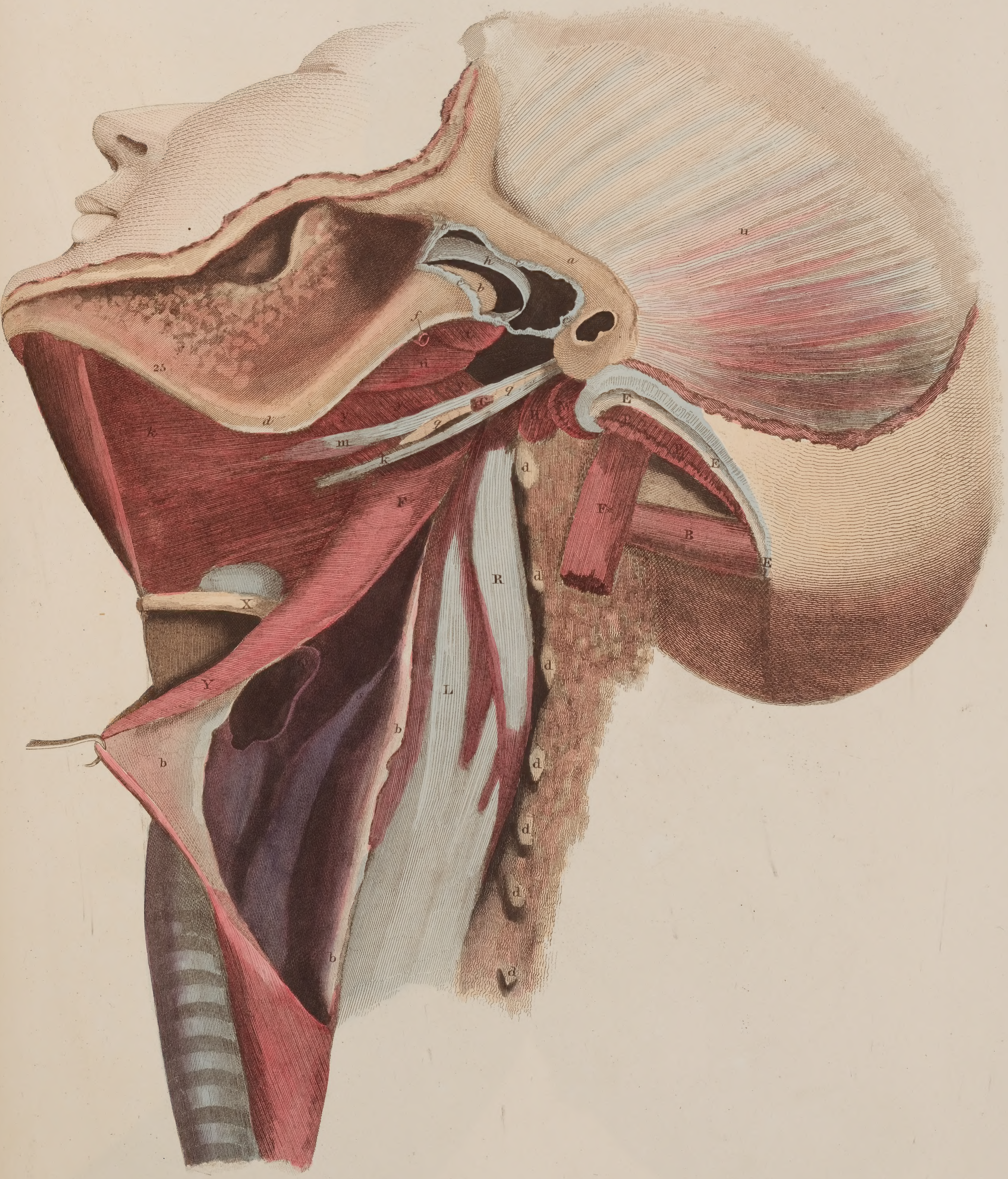
PLATE XV.



Engd by W. H. Lizars


w
w
25
l
a
c
m
m
d
s
i
G
G
G
W
X
X
i
p
F
E
C
C
E
40
Y
R
B
a
L
Y
P
P
40
I
40
K
L
A
A
A
e

Engraved by W.H.Lizars.


c
h
e
a
u
c
b
f
t
n
25
y
q
G
x
y
d
g
k
m
k
H
N
E
P
O
E
F
d
F×
B
E
R
X
d
Y
L
b
b
d
d
d
b
d

Engd. by W. H. Lizars.

PLATE III.

Fig. 2.

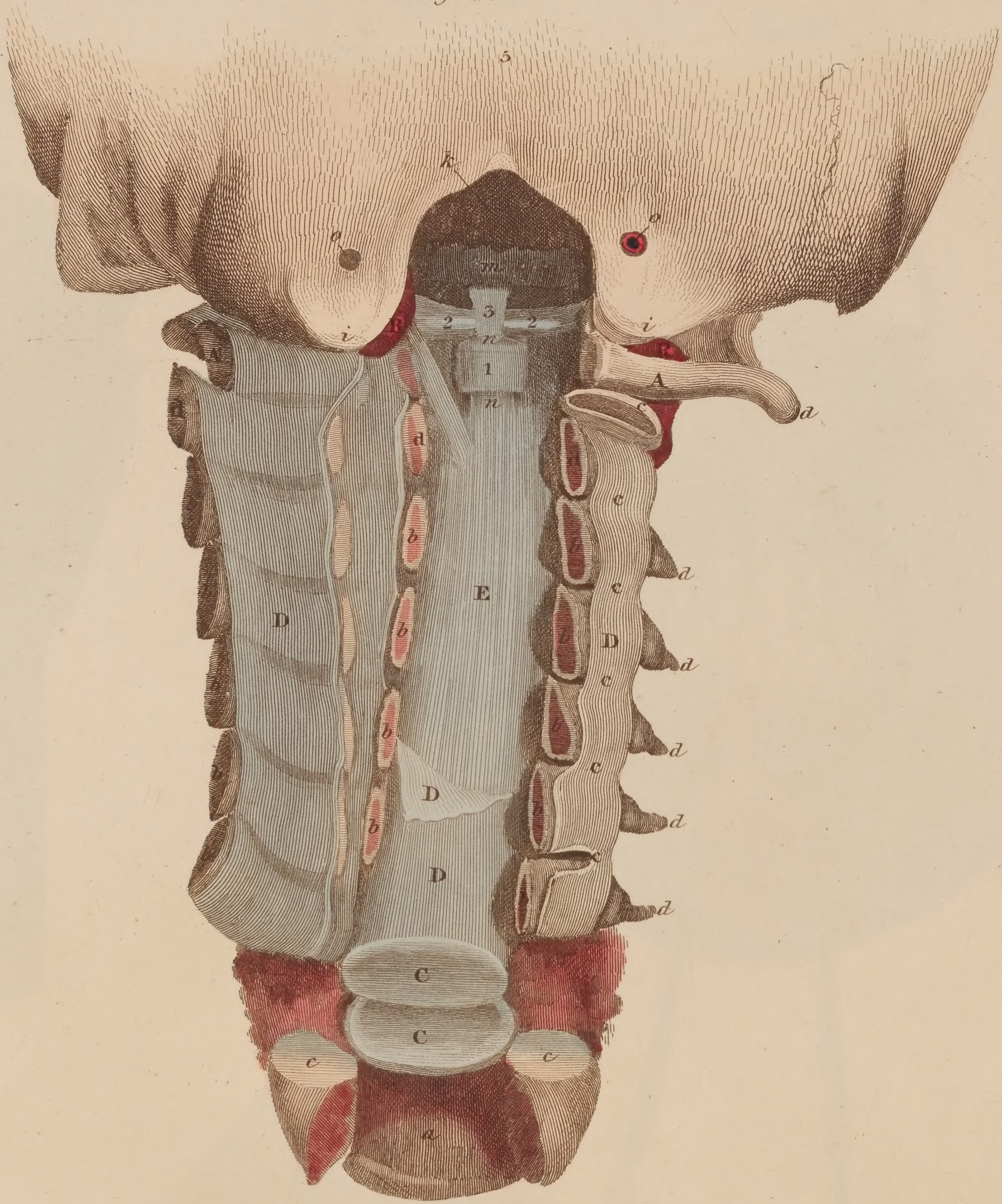

5
k
o
o
m
3
2
2
n
1
n
i
i
A
d
D
d
b
b
b
b
E
D
D
c
c
c
D
c
c
d
d
d
d
d
C
C
c
c
a

Fig. 1.

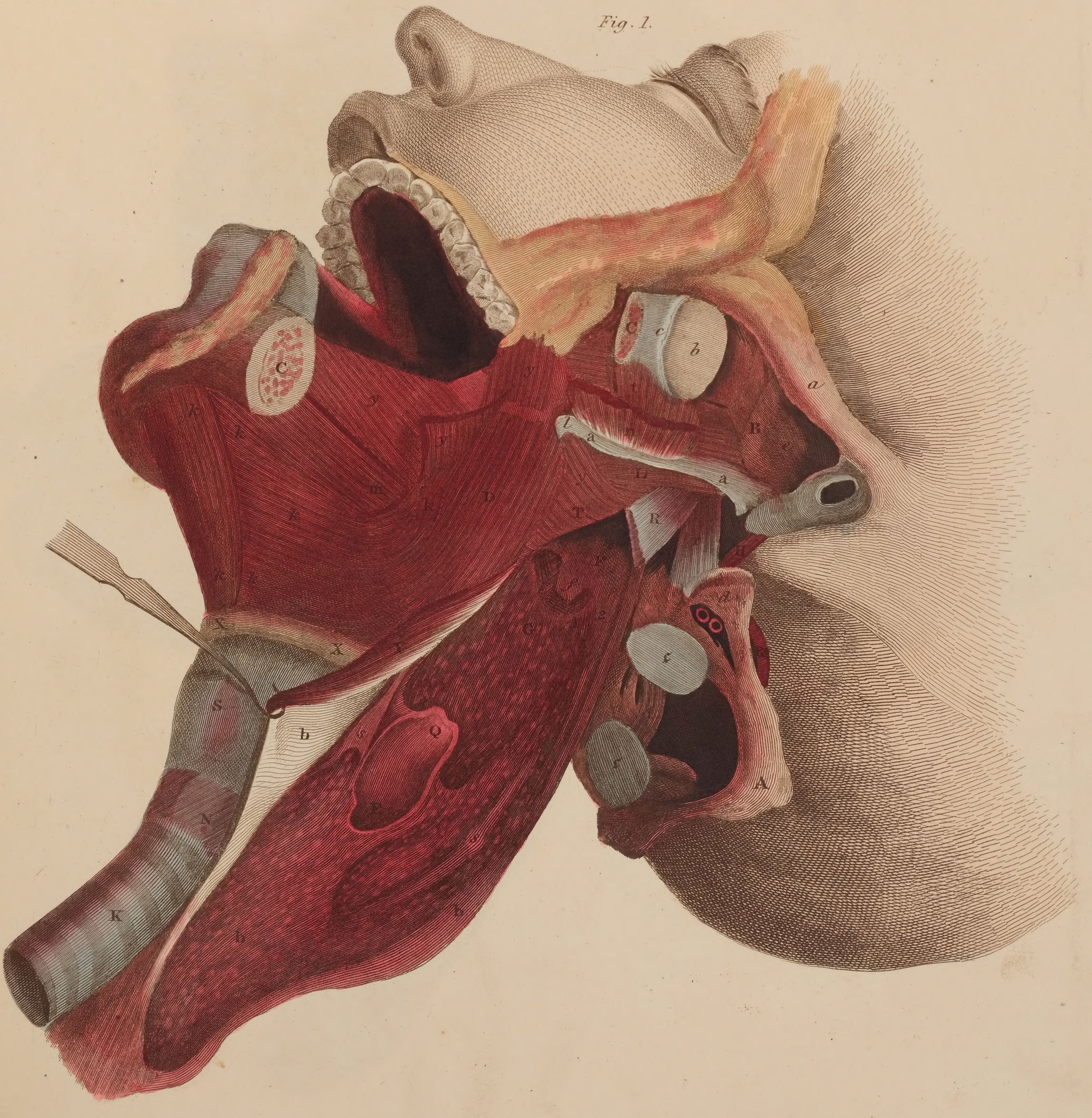

C
C
c
b
a
B
y
y
y
k
k
k
m
D
l
a
L
a
T
R
F
G
X
X
S
b
Q
N
K
b
A
d

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PLATE IV.

Fig. 2.

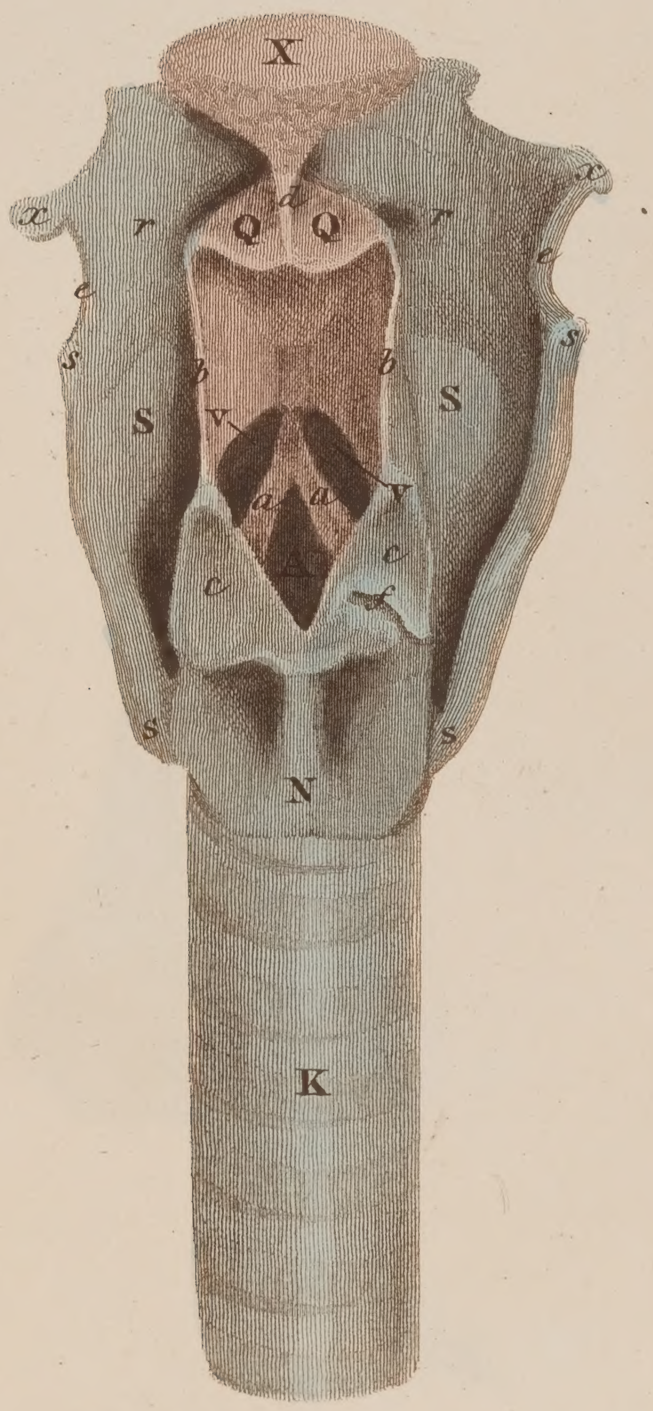

X
Q Q
x r r x
s s
S S
b b
v v
a a
c c
f
s s
N
K

Fig. 3.

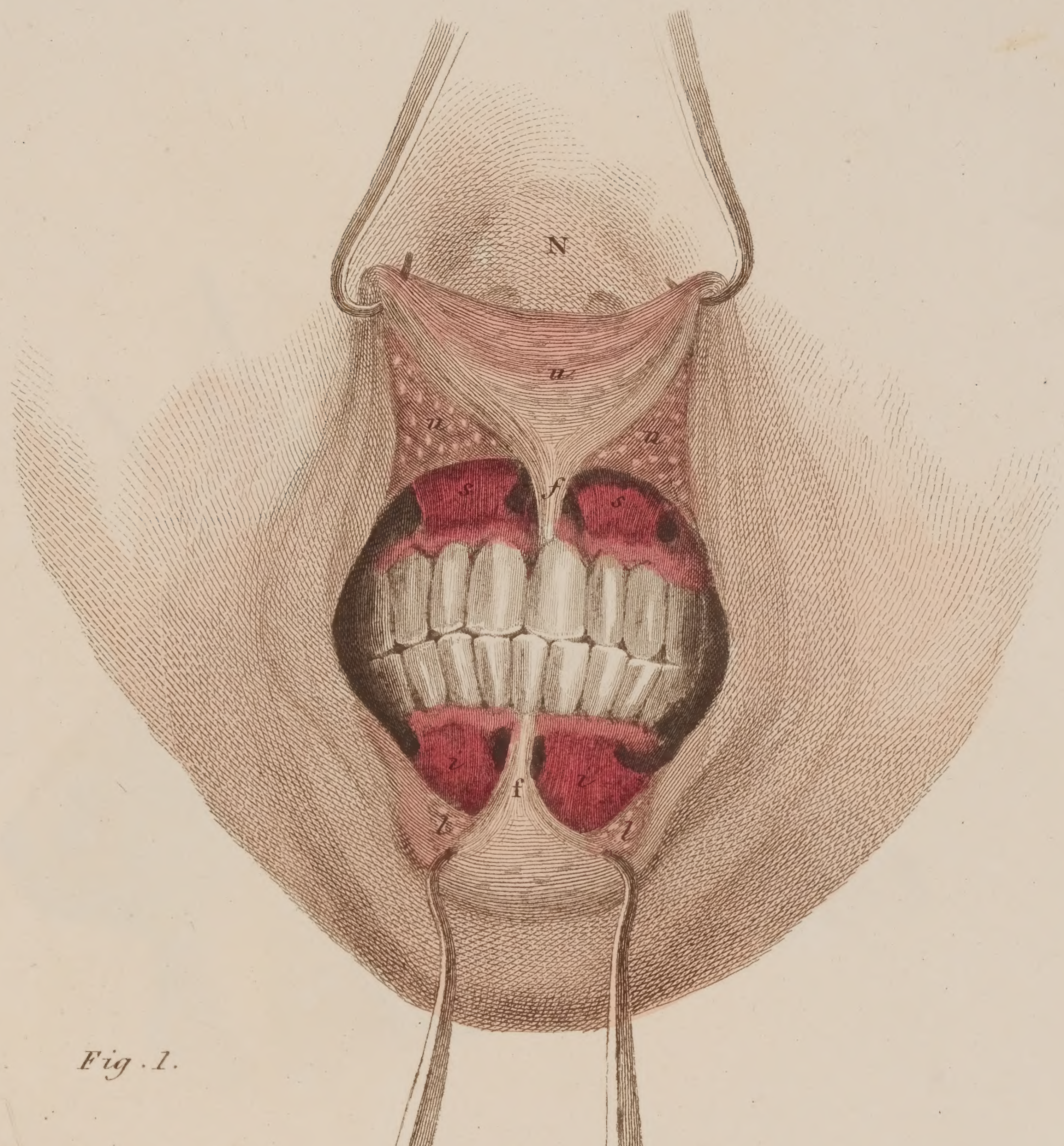
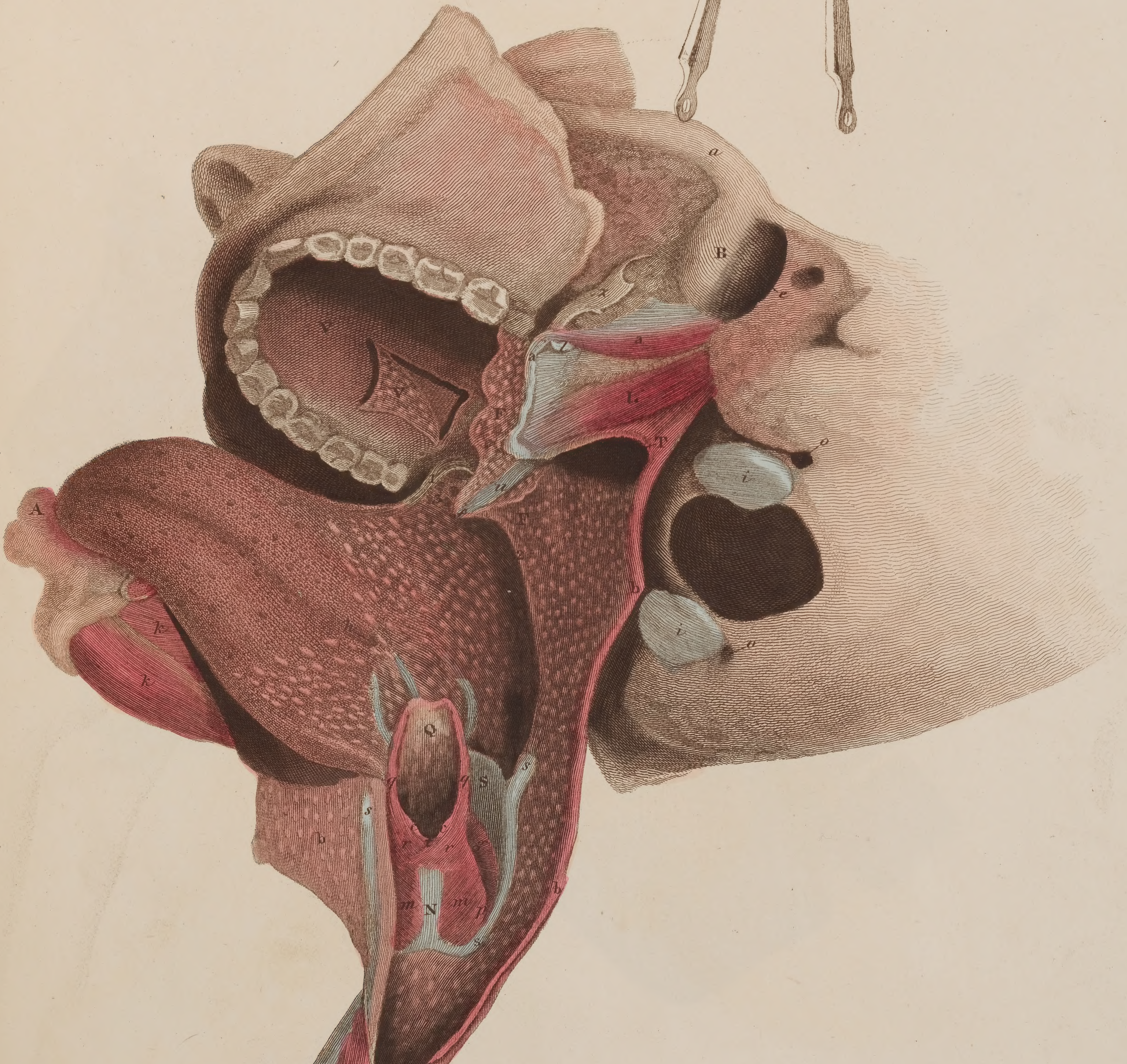

N
u
u u
f
s s
i i
f
l l

Fig. 1.


a
B
e
V
a
L
T
i
o
A
i
n
k
k
Q
S
s
b
h
m N m
K
I

Engd. by W.H.Lizars.

Fig. 2.

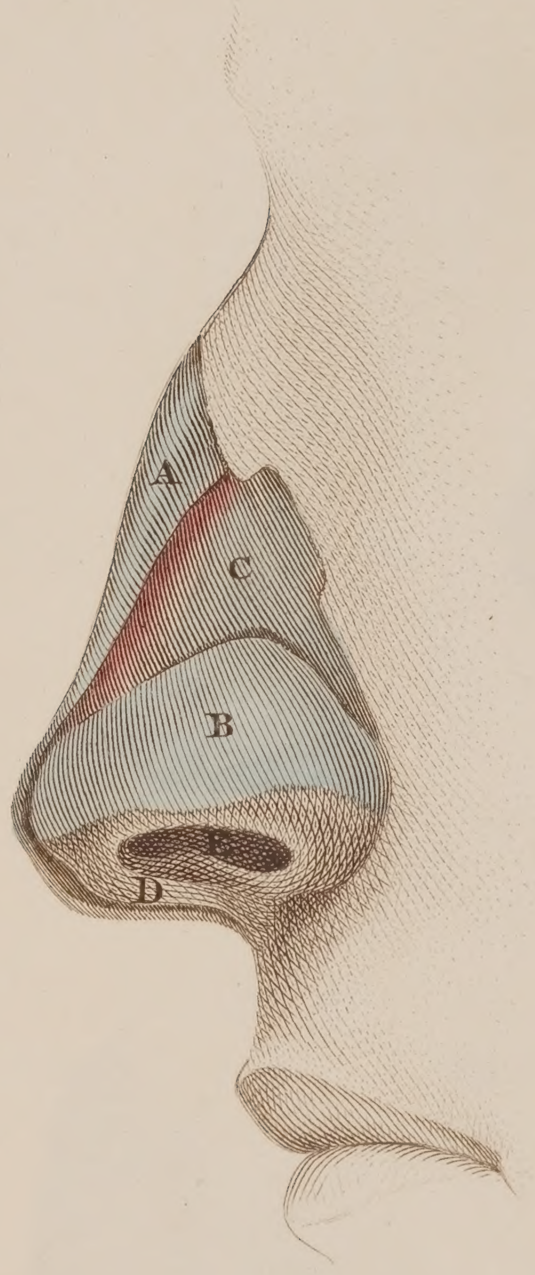


Fig. 3.

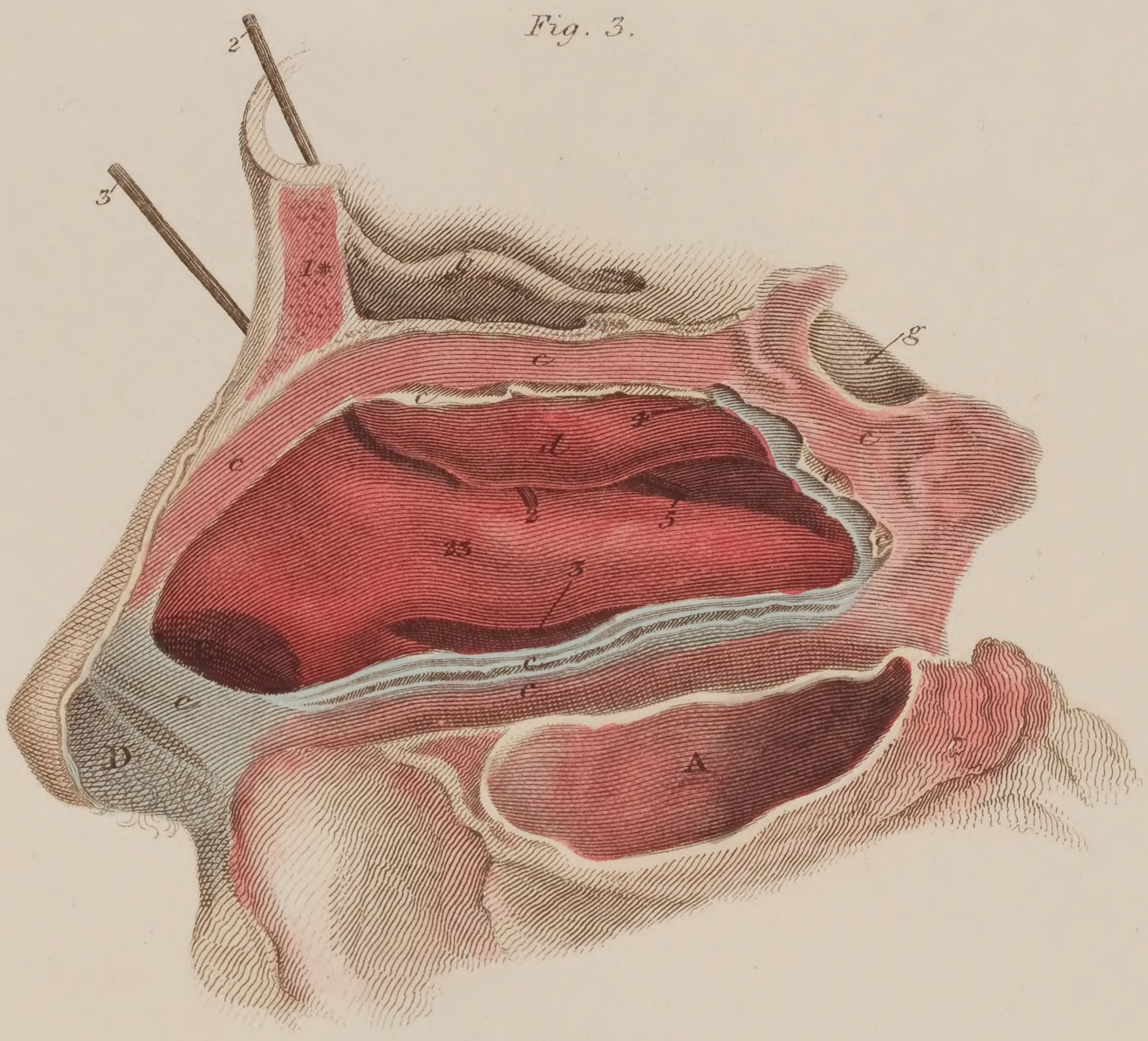
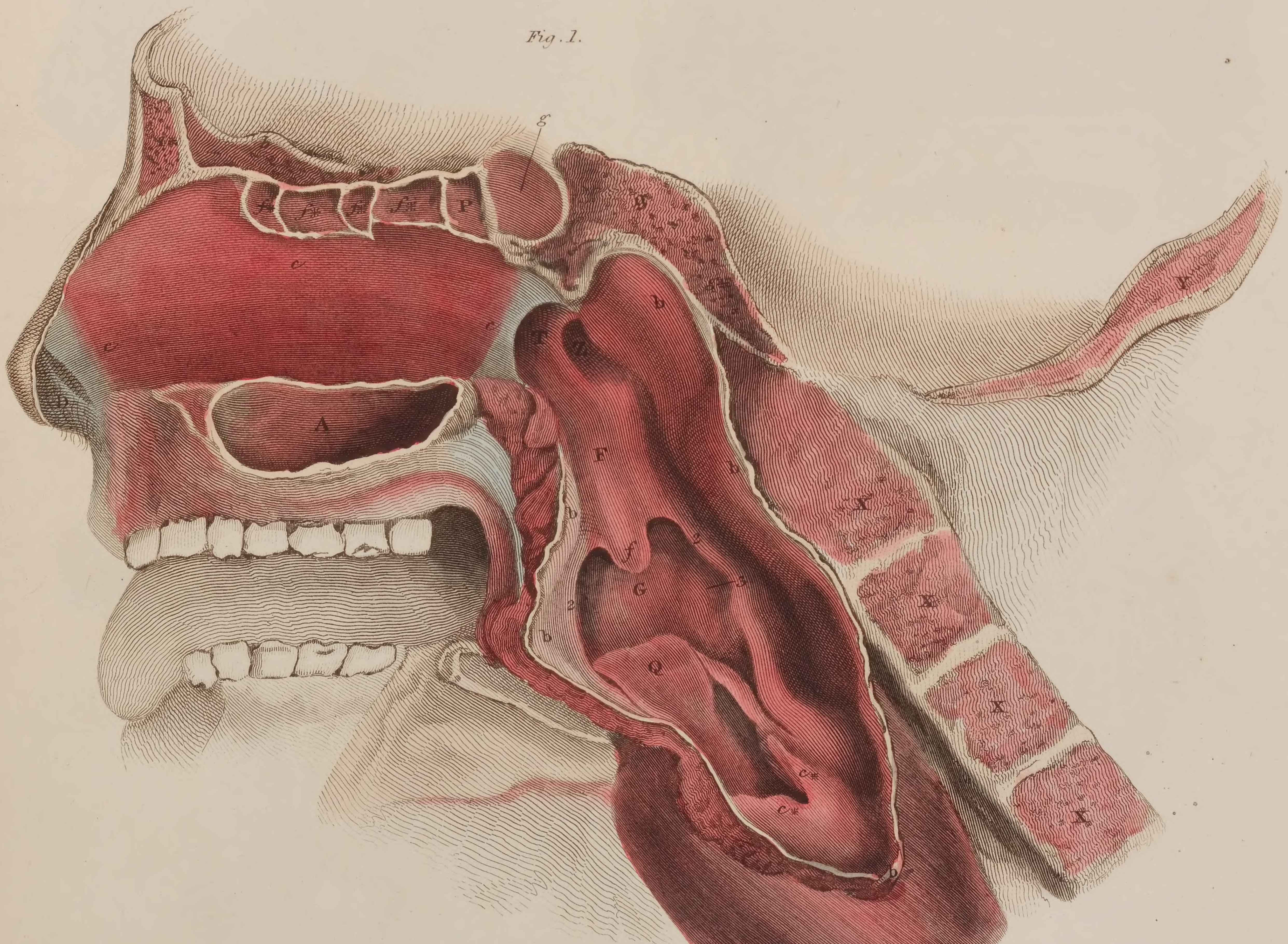

2'
3'
1*
g
e
e
4
d
c
2
5
25
3
e
c
c
e
D
A

Fig. 1.


g
f*
f*
f*
f*
P
c
c
c
D
T
b
A
F
b
X
b
f
G
2
b
Q
X
X
X
Y
c*
c*
b

Engd by W.H. Lizars

Fig. 1.

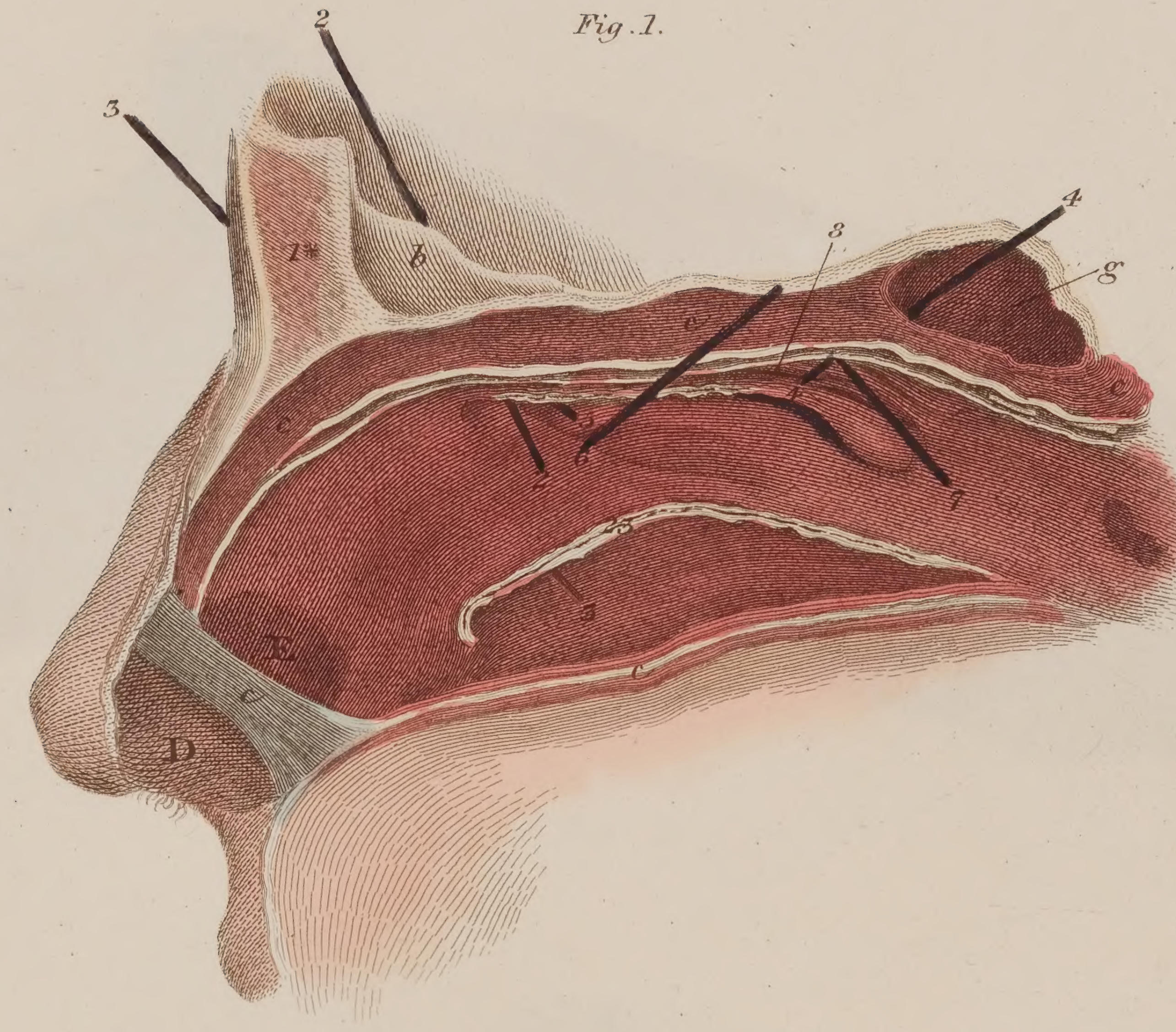

2
3
1*
b
4
8
g
c
c
c
5
6
7
5
3
E
c
D

Fig. 3.

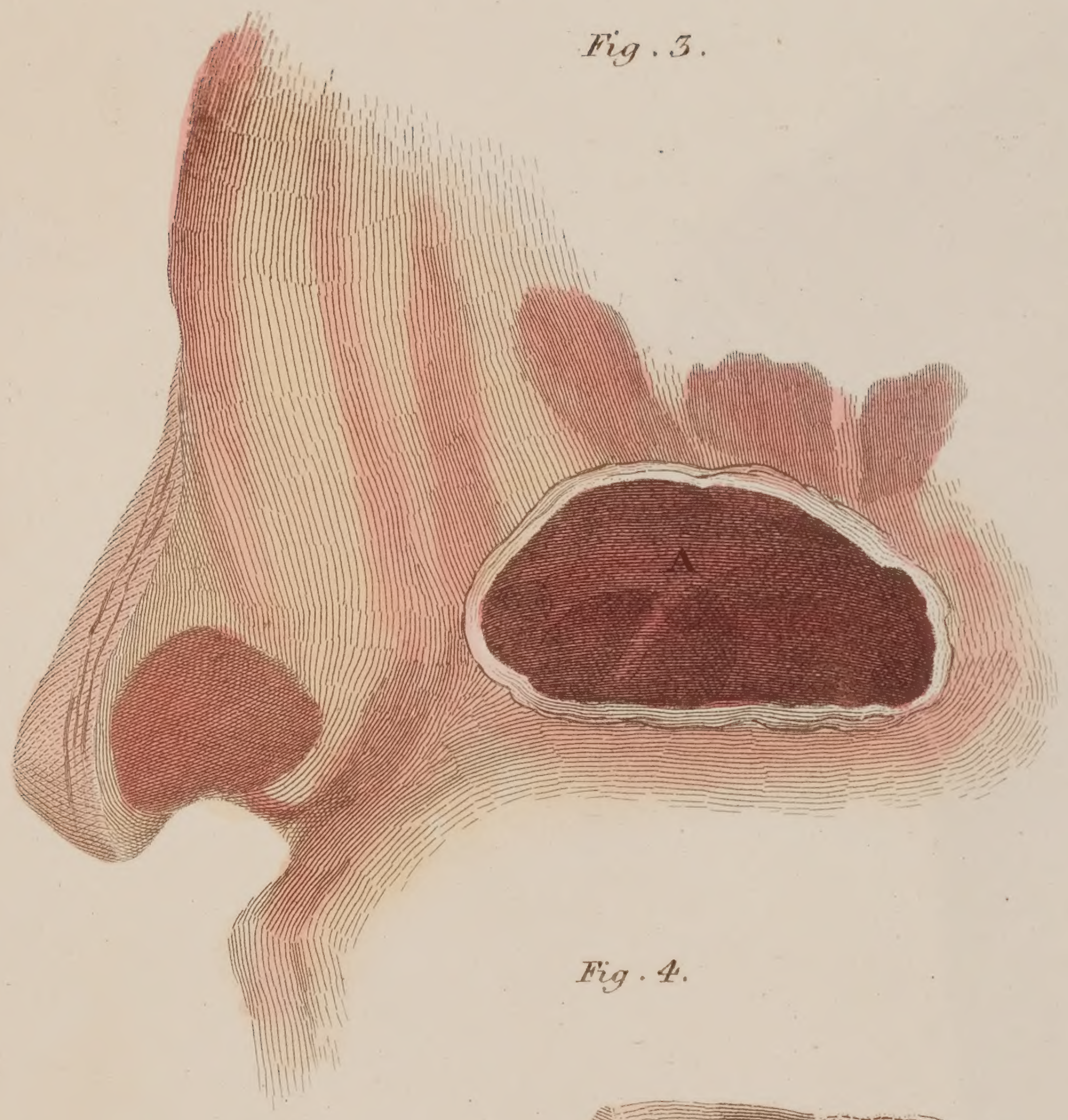


Fig. 2.

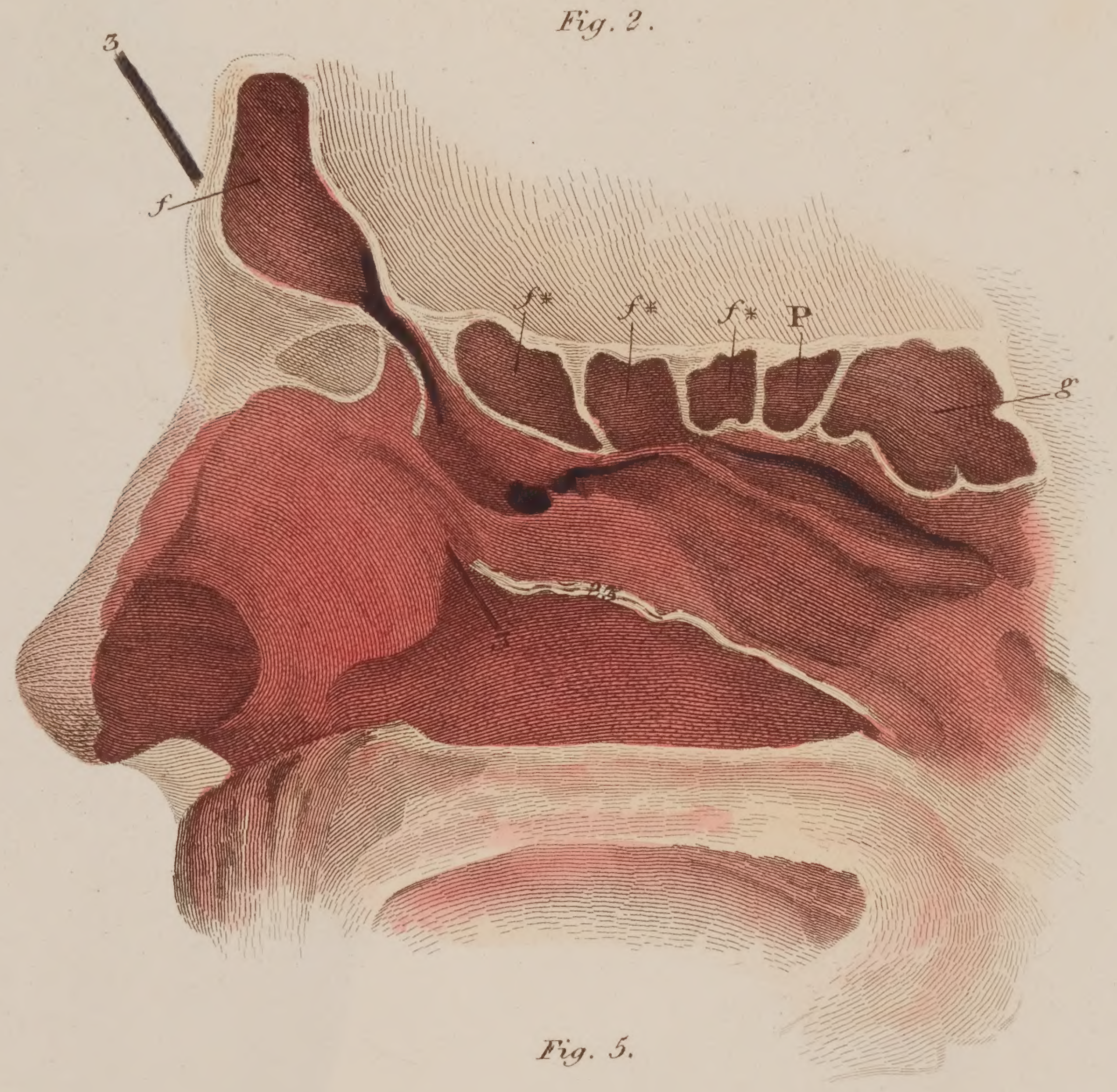


Fig. 4.

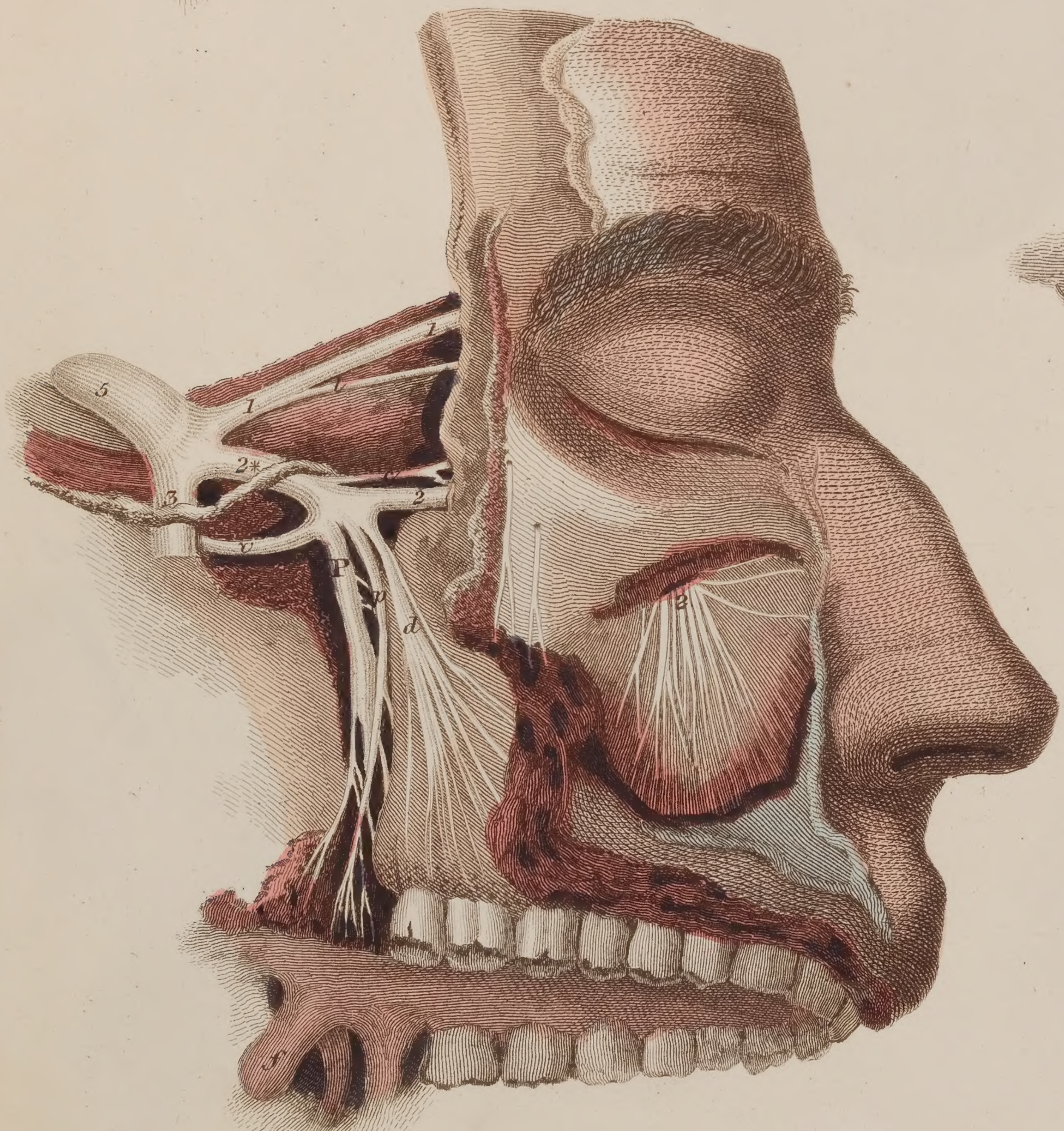

5
1
1
1
2*
3
2
v
P
p
d
2
f

Fig. 5.

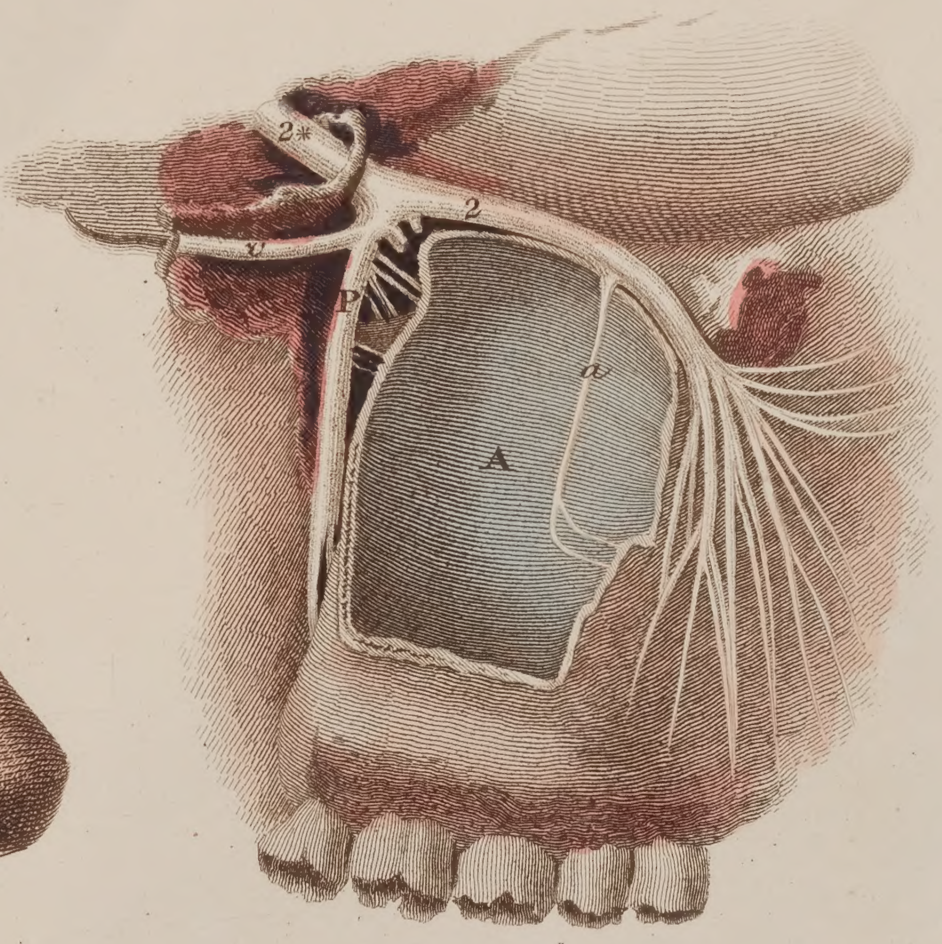


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Fig. 2.

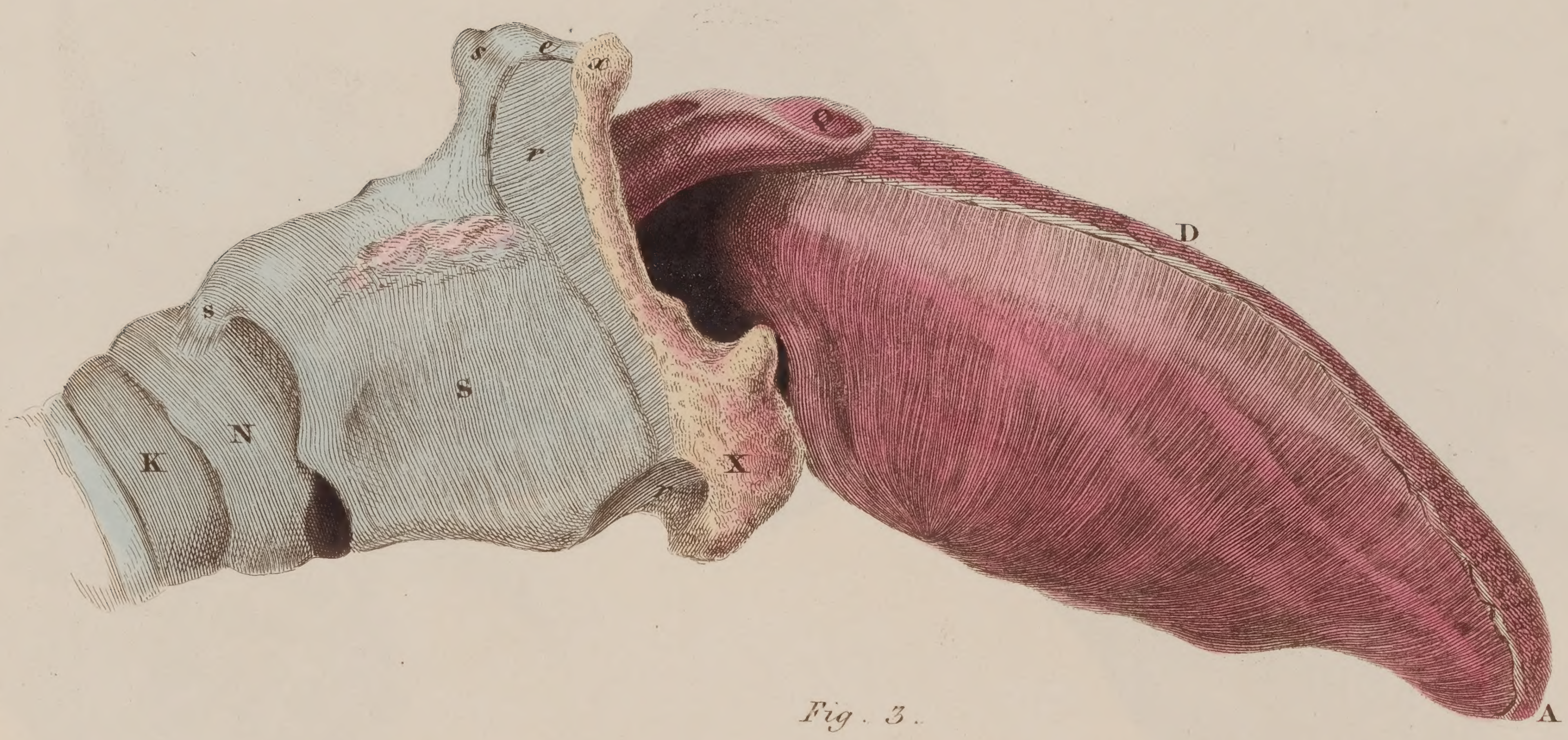
s
e
x
r
s
S
K
N
X
r
D
A

Fig. 3.

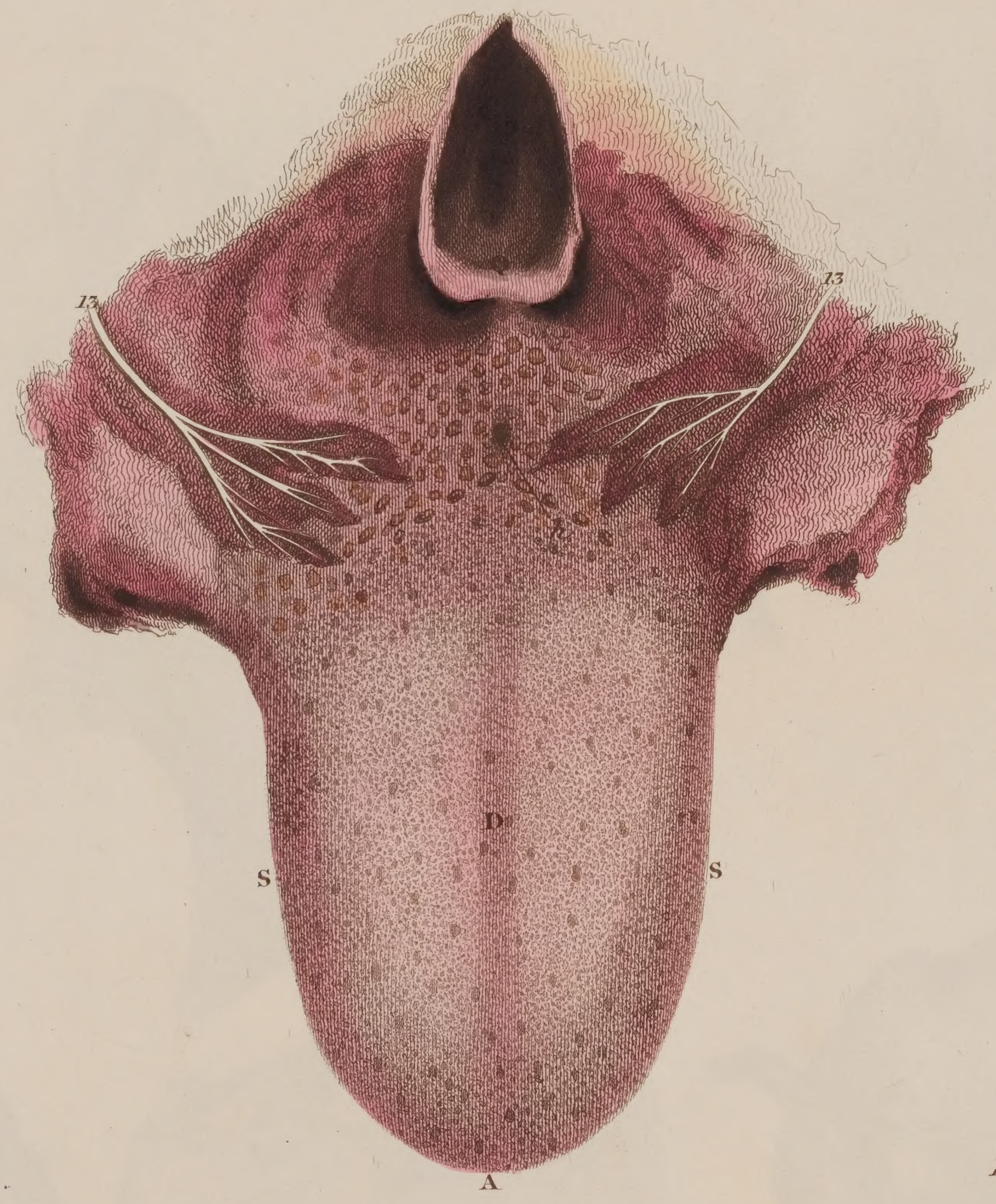

Fig. 4.

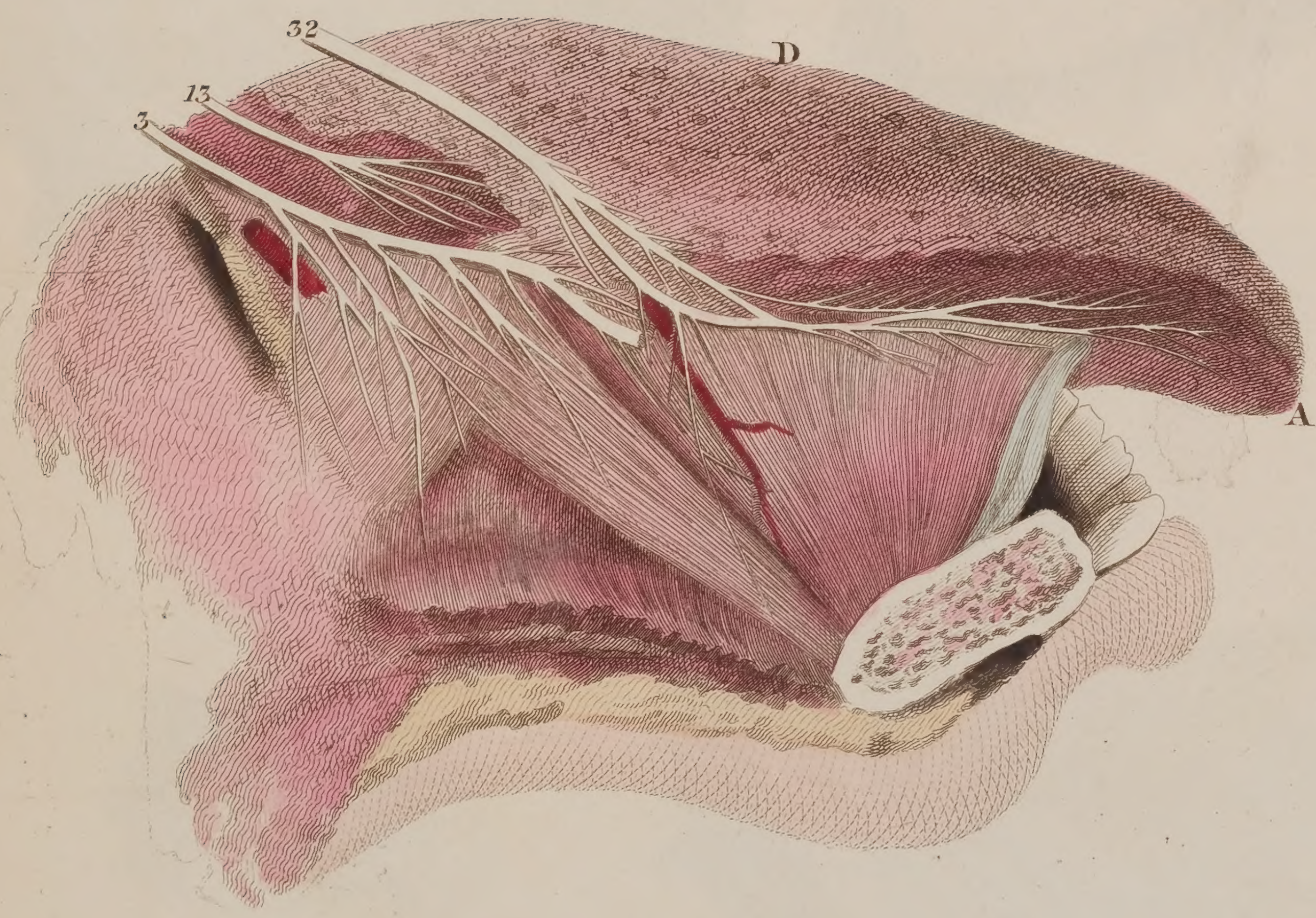

Fig. 1.

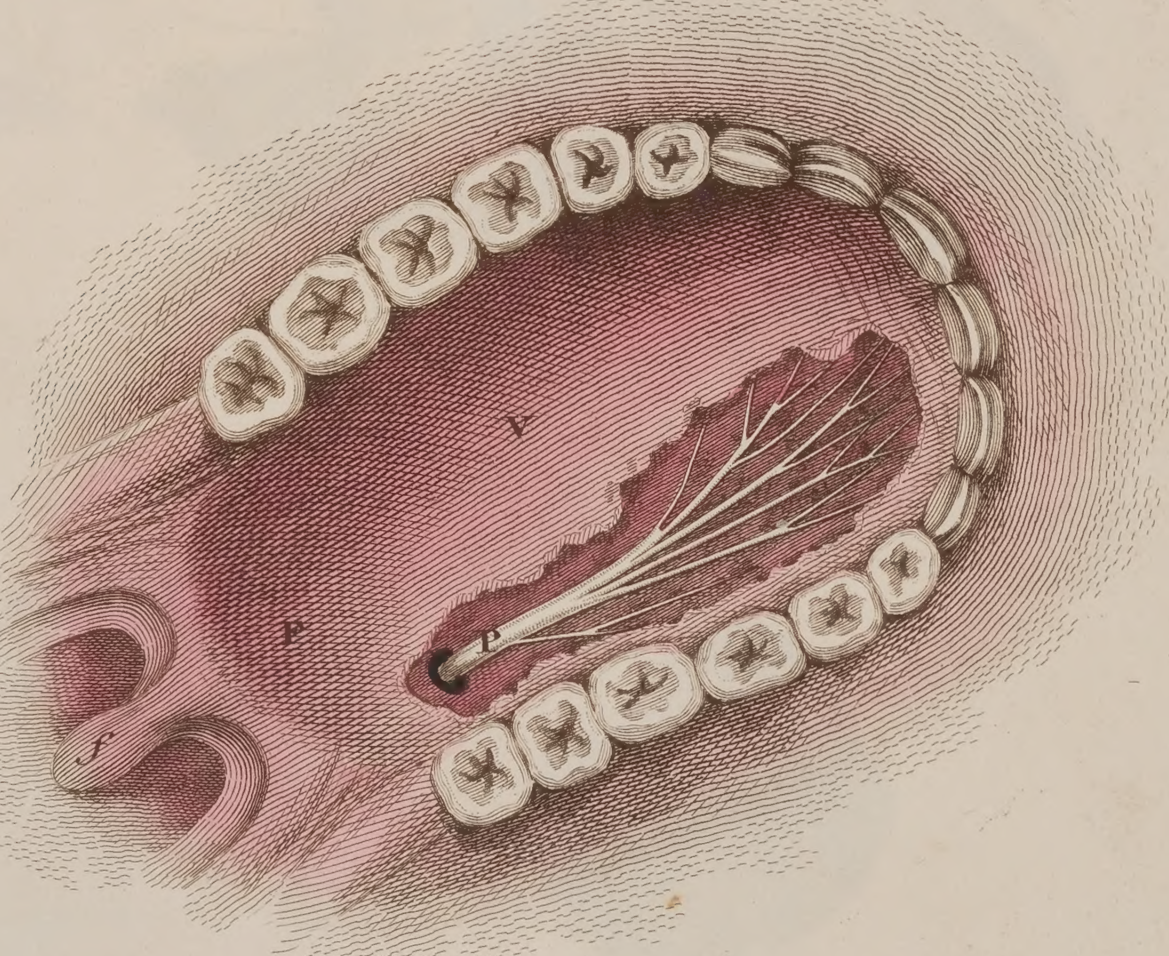

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PLATE VIII.

Fig. 1.

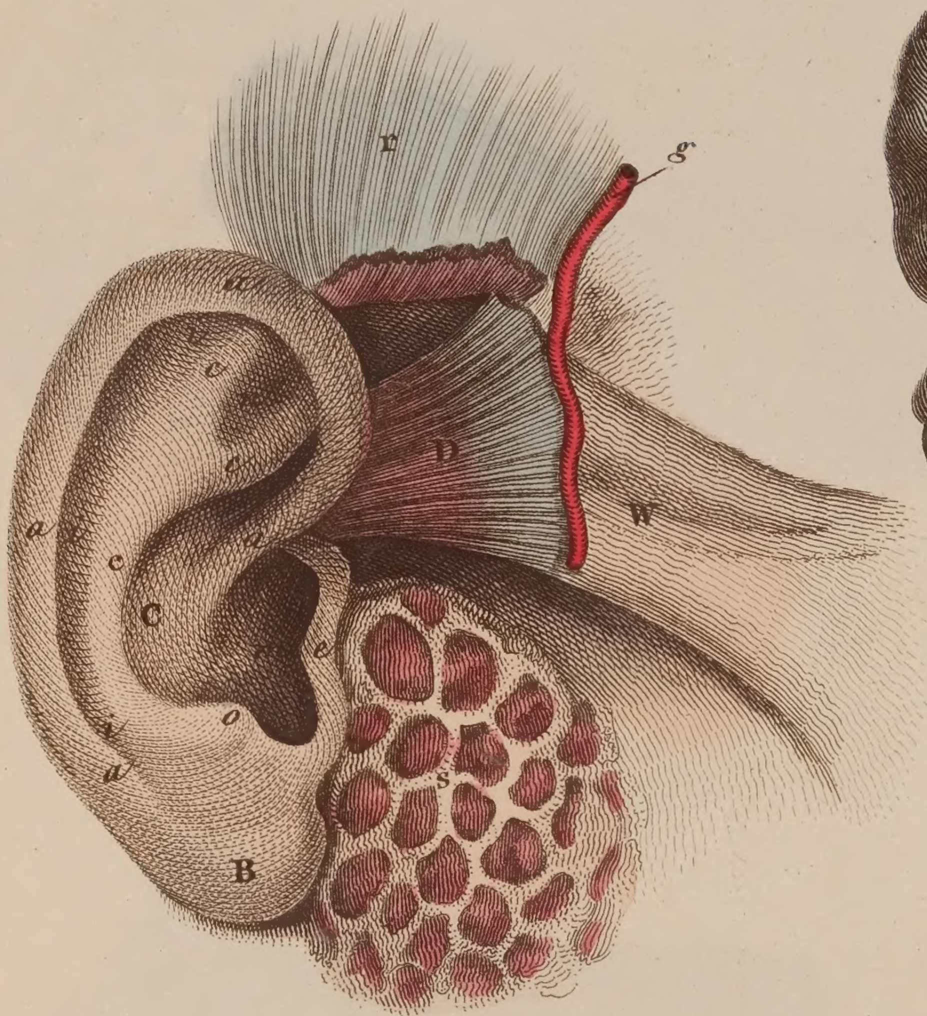

r
g
a
e
c
D
W
a
C
c
o
e
s
a
B

Fig. 4.

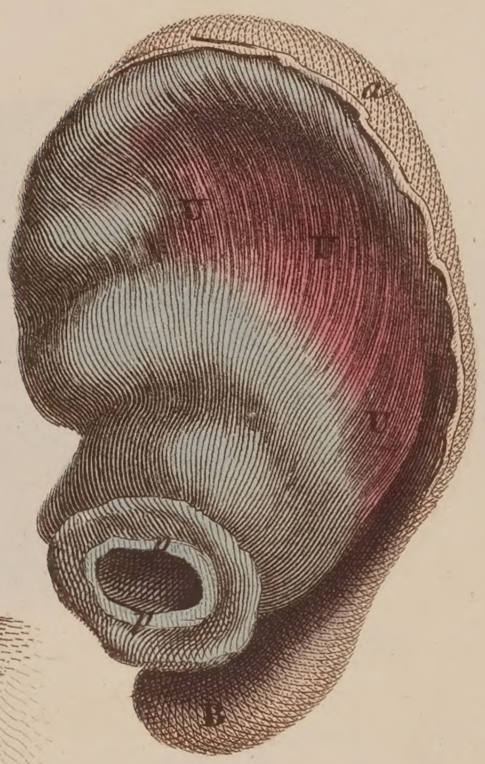


Fig. 2.

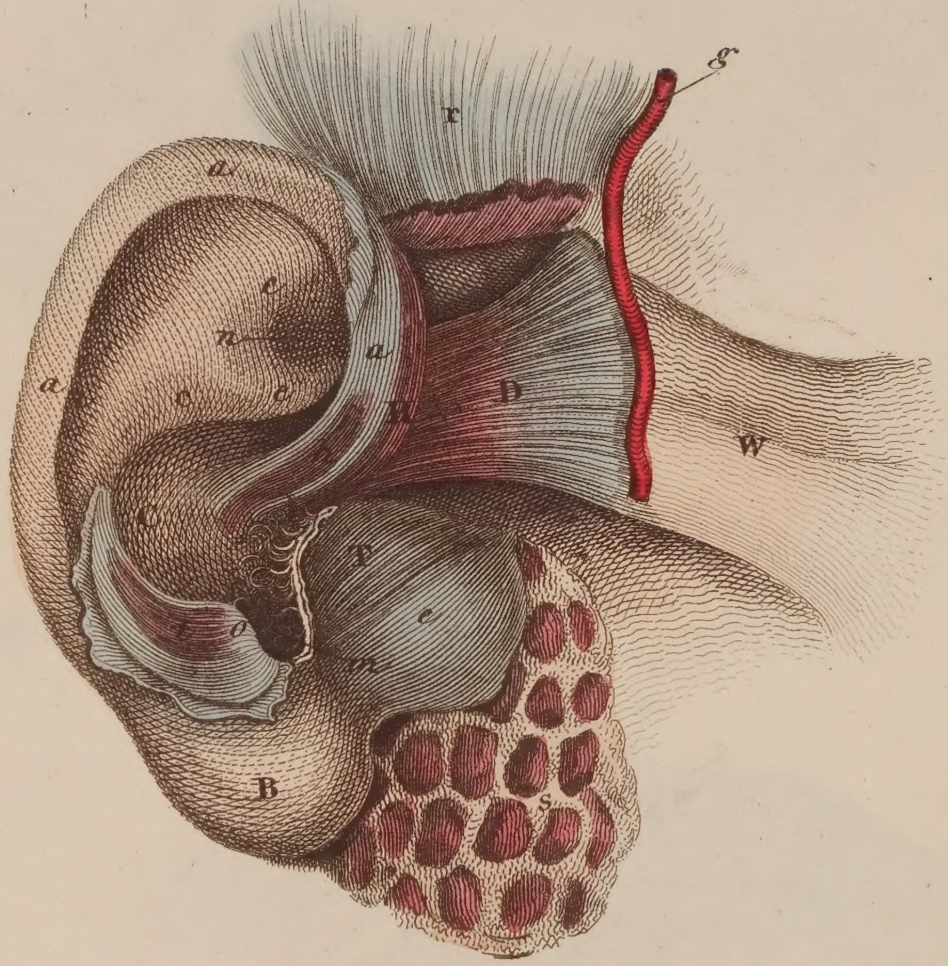

g
r
a
e
n
a
c
c
D
W
C
T
e
o
m
B

Fig. 3.

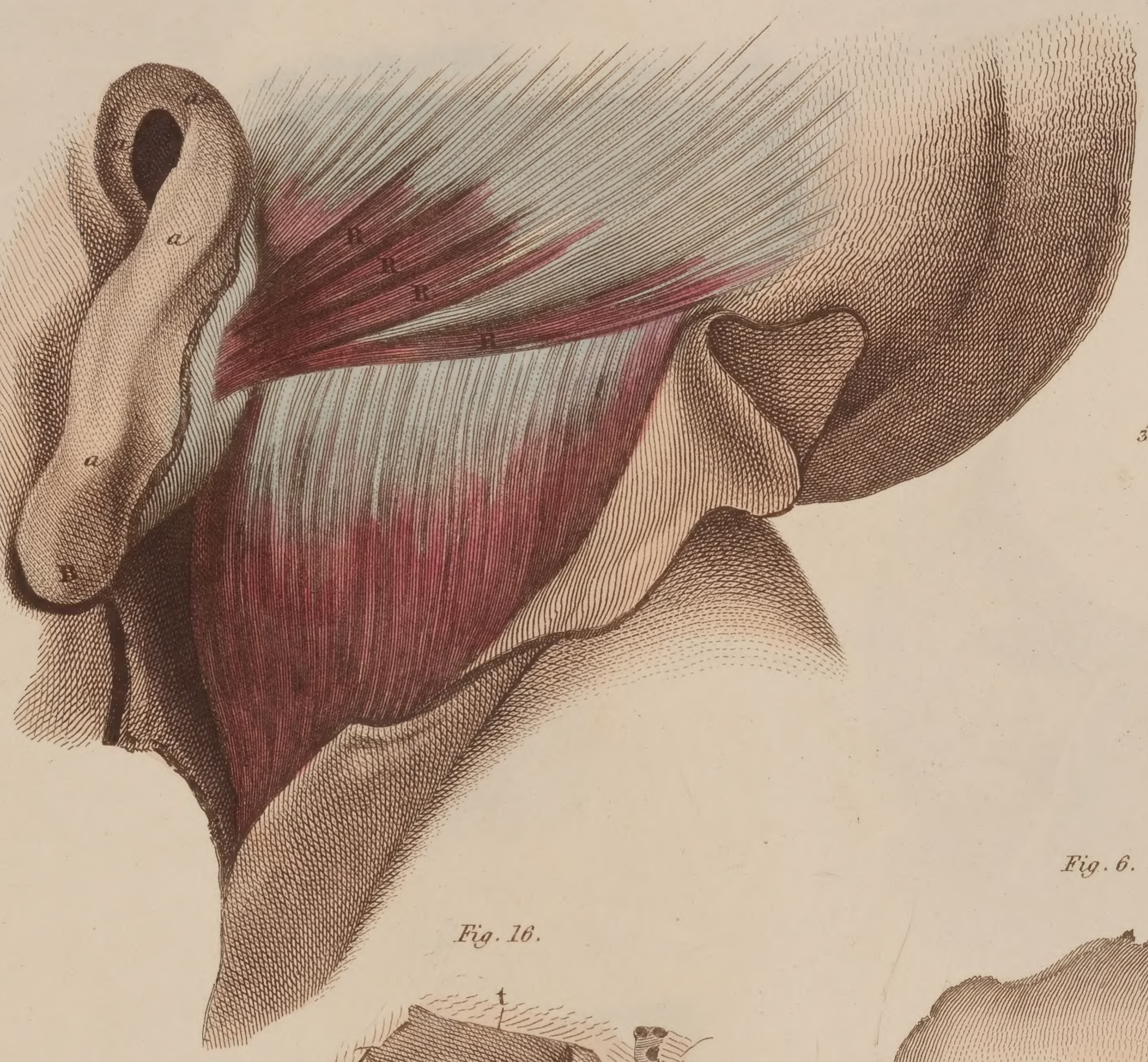


Fig. 10.

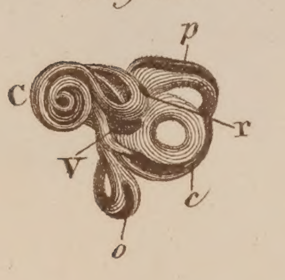


Fig. 11.

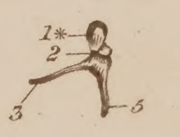


Fig. 12.

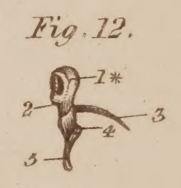


Fig. 13.

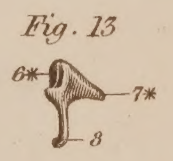


Fig. 14.

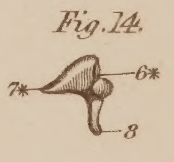


Fig. 15.

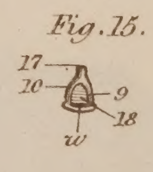


Fig. 7.

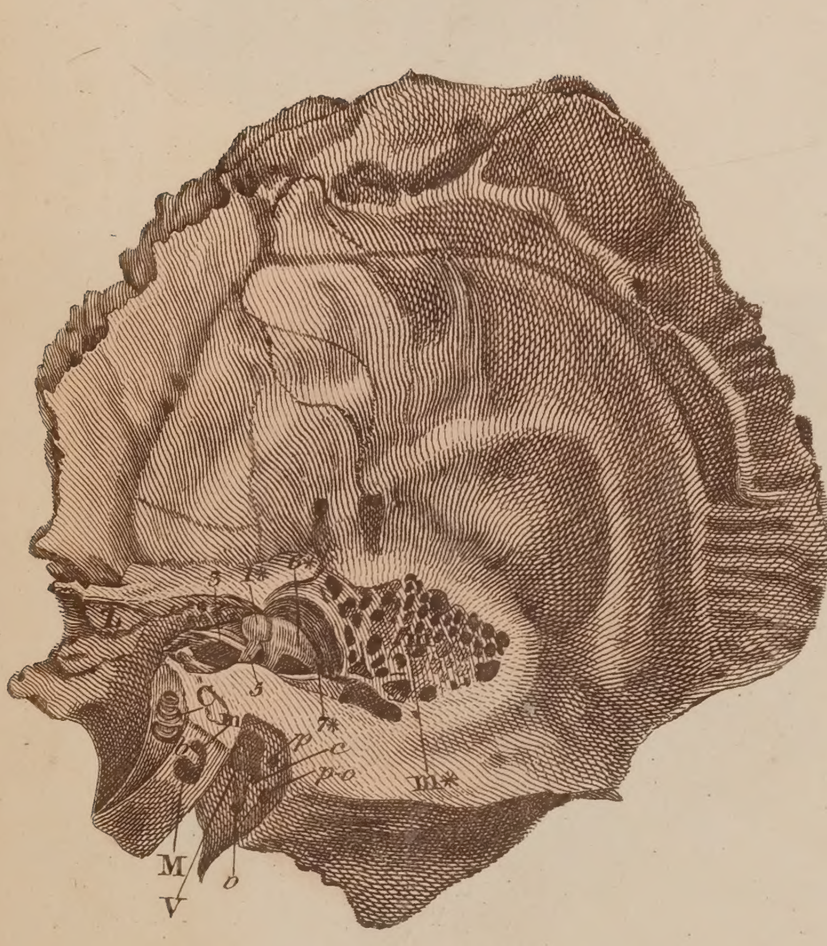


Fig. 16.

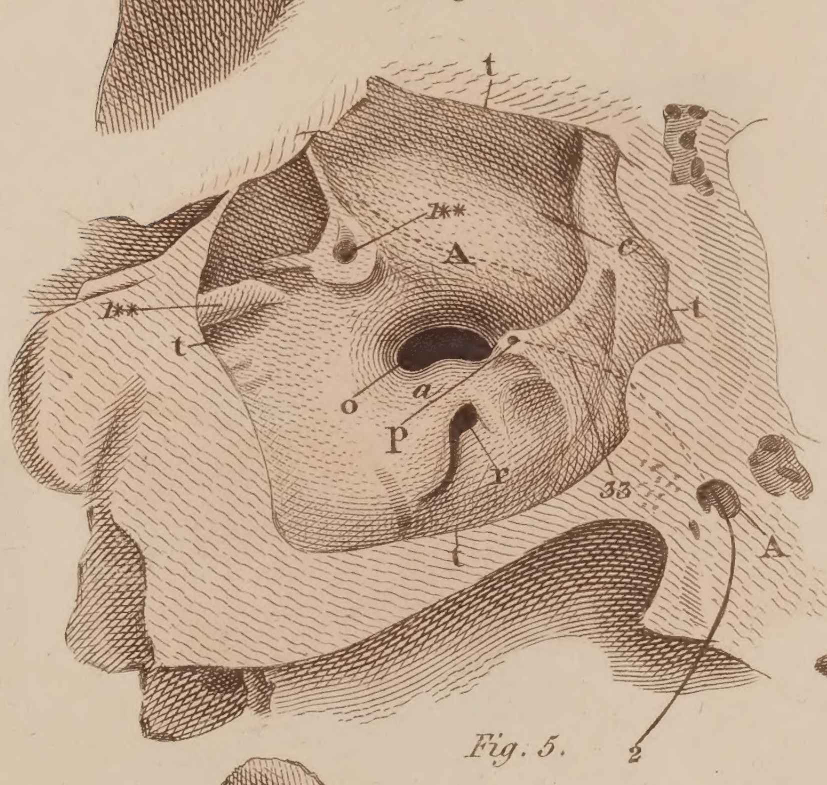

t
1**
A
c
t
1**
t
o
a
P
r
33
A
2

Fig. 6.

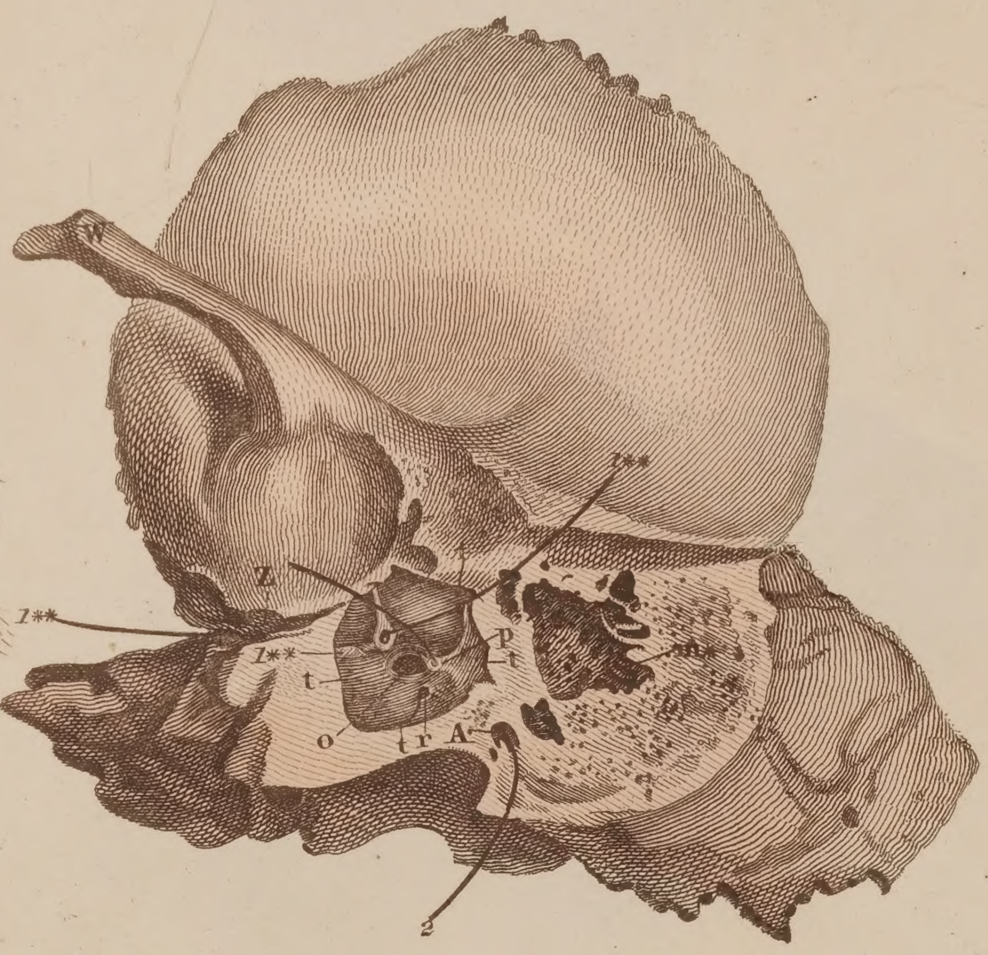

W
1**
Z
1**
1**
P
t
t
o
t
r
A
2

Fig. 5.

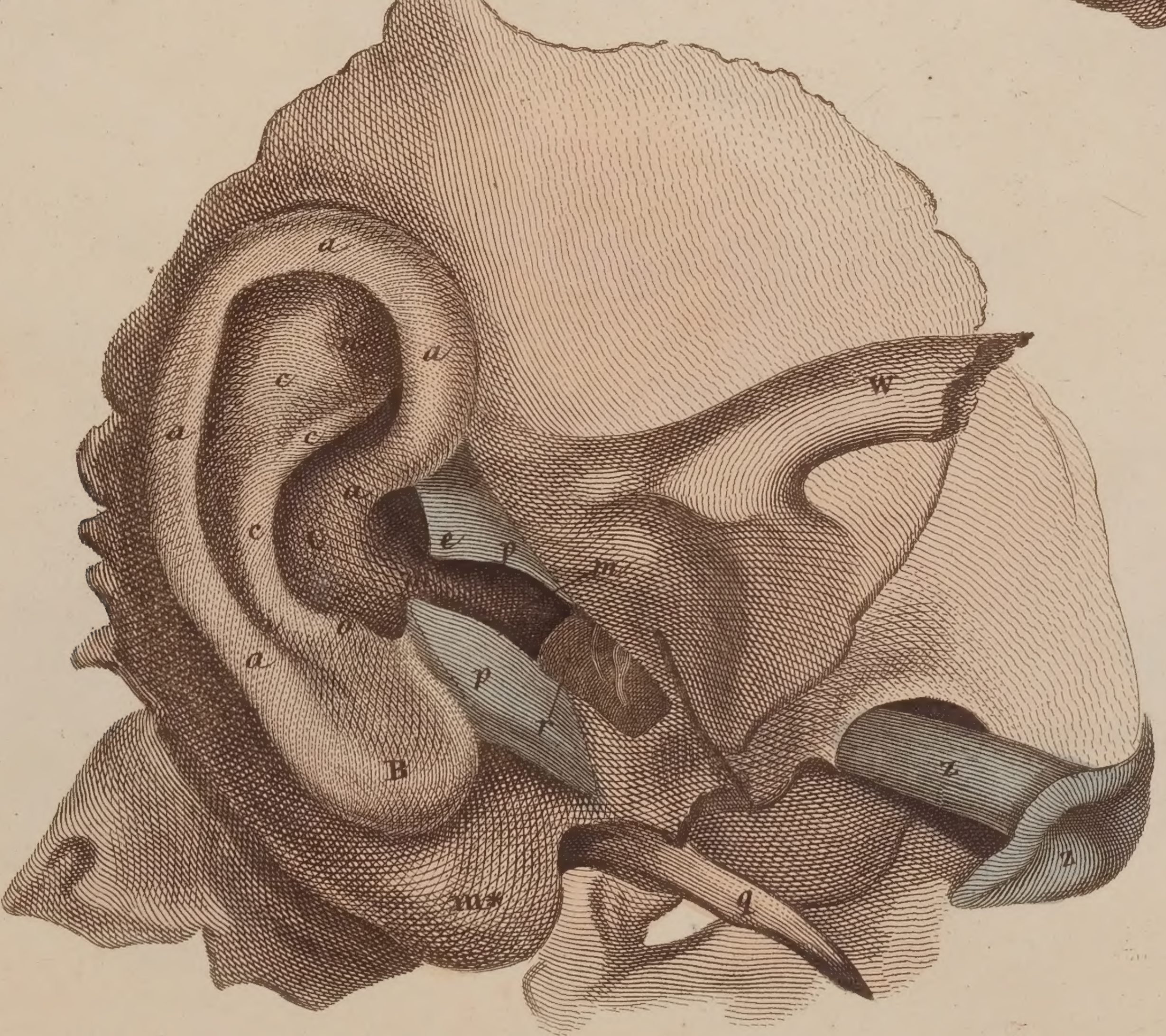

a
c
a
a
c
W
e
p
m
p
B
L
T
g
m*

Fig. 9.

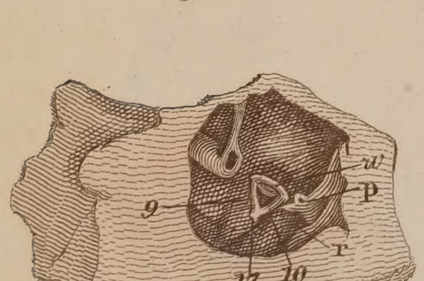
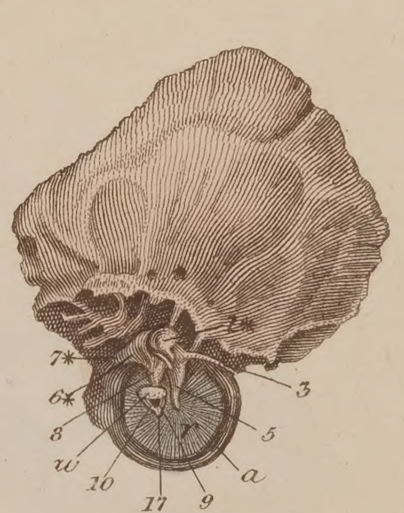


Fig. 8.


1*
7*
6*
3
8
5
w
10
17
9
a

Eng.d by W.H. Lizars

Fig. 1.

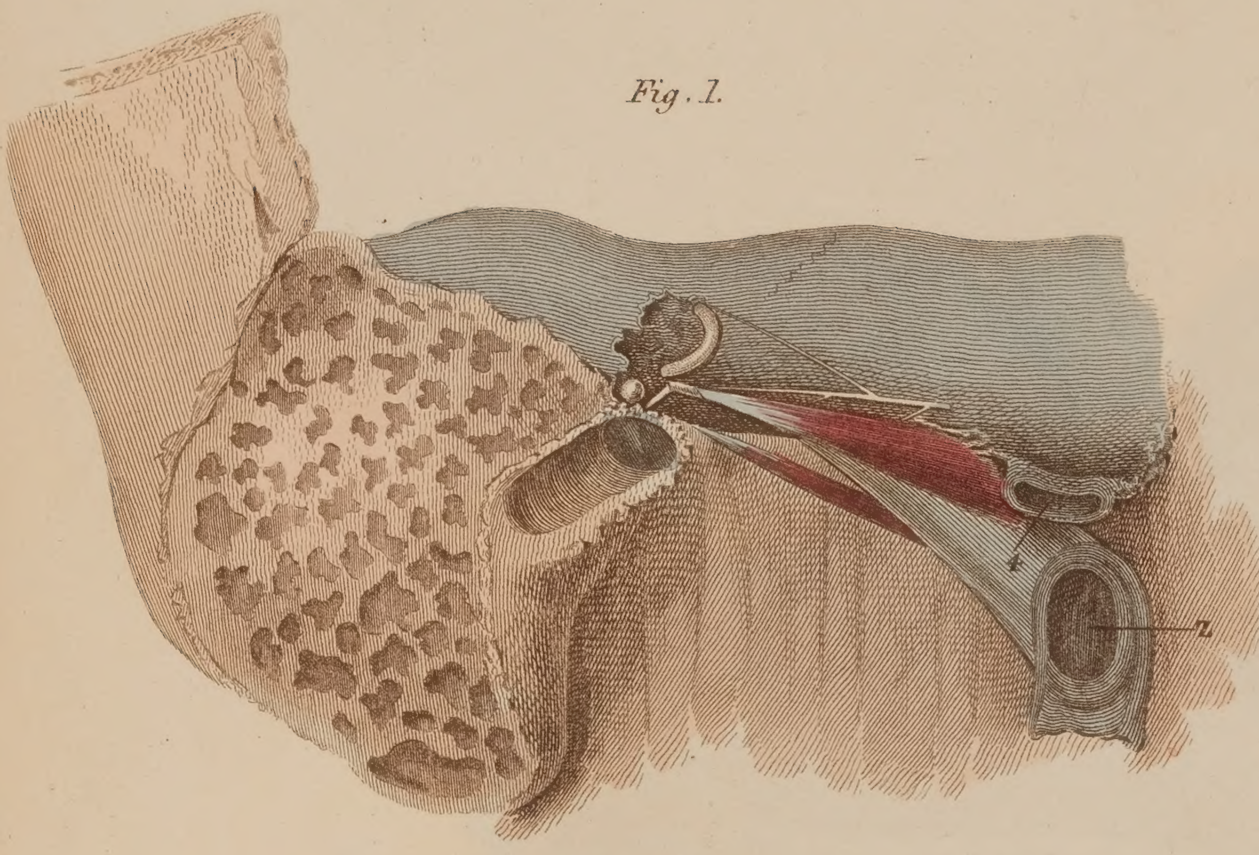


Fig. 3.

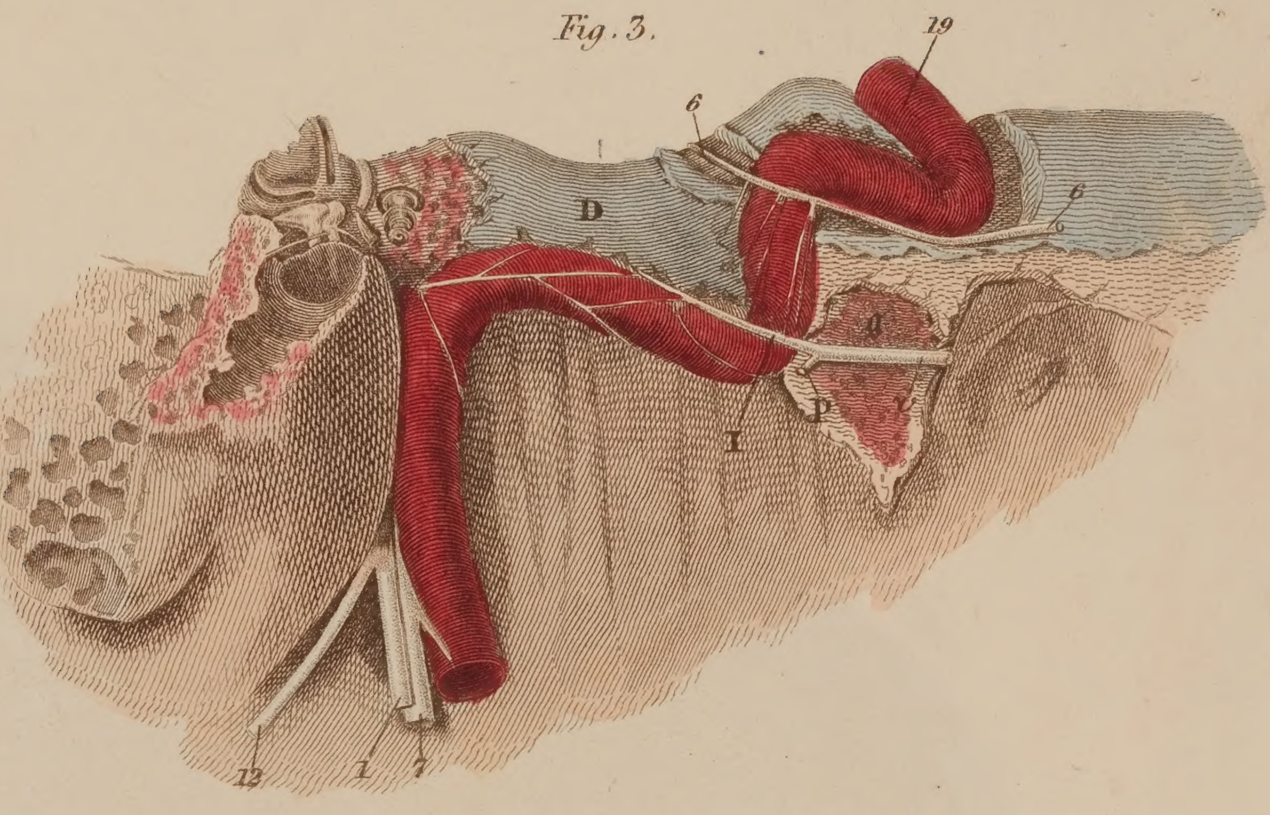

19
6
D
6
q
I
p
v
12
1
7

Fig. 14.

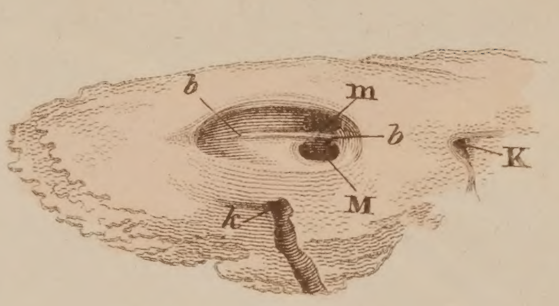


Fig. 4.

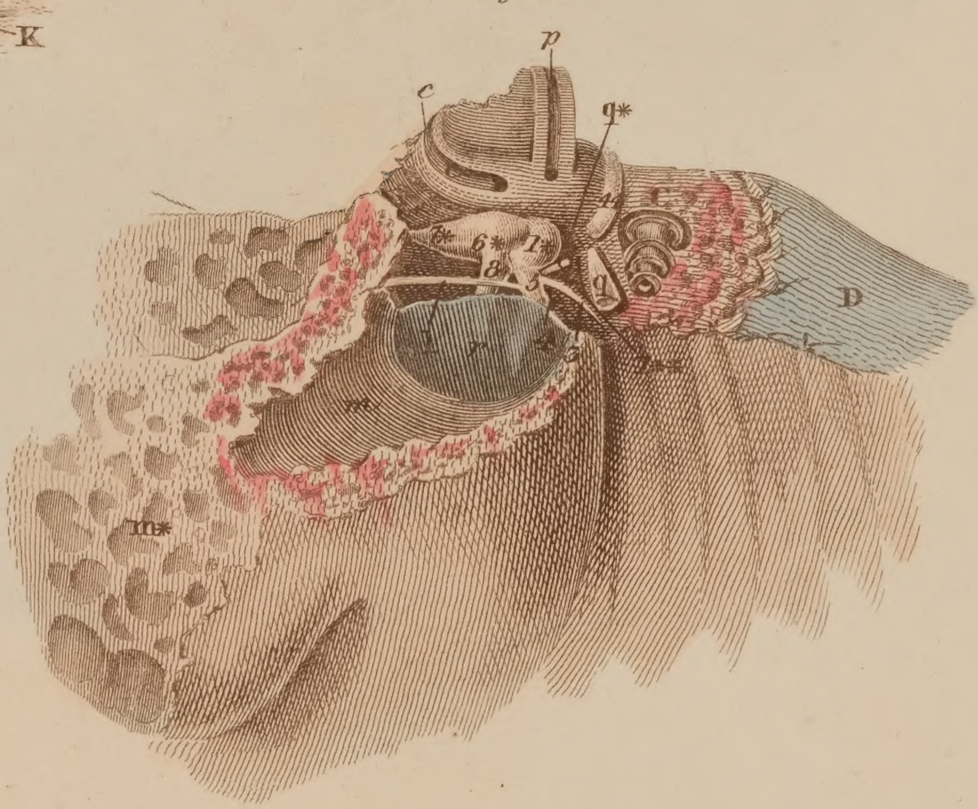

p
c
q*
44
8*
6*
7*
8
5
q
D
r
m
m*

Fig. 2.

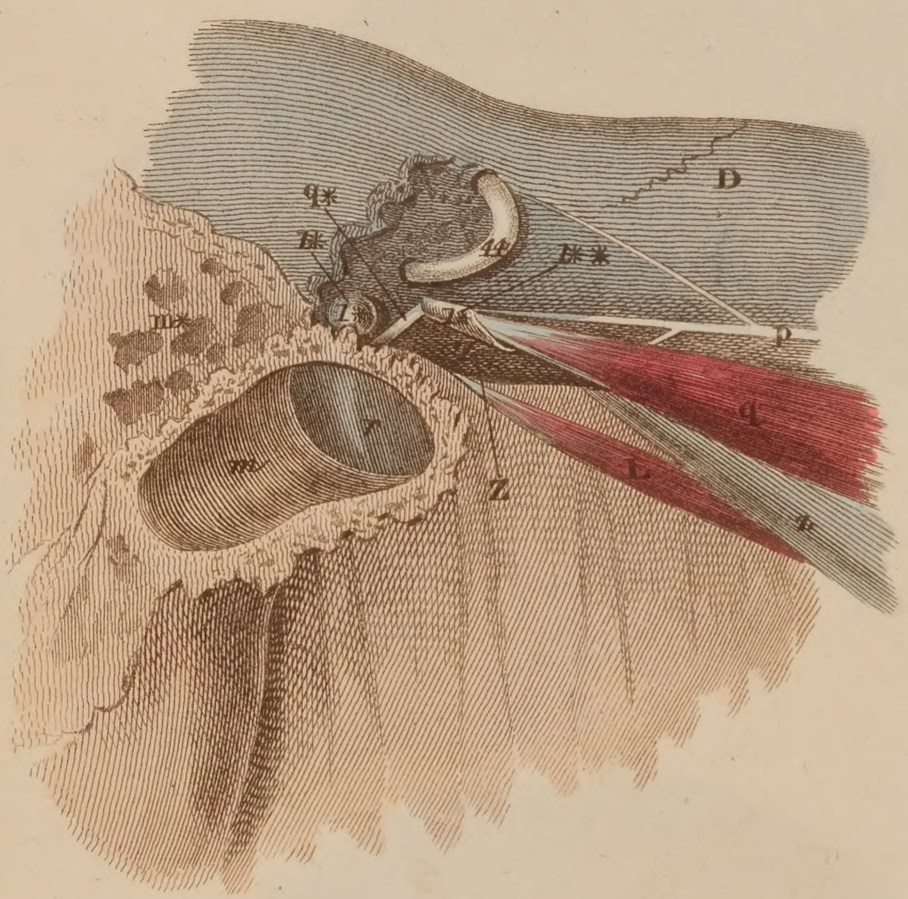

q*
8*
44
8**
D
m*
7*
p
q
r
m
Z
L
4

Fig. 11.

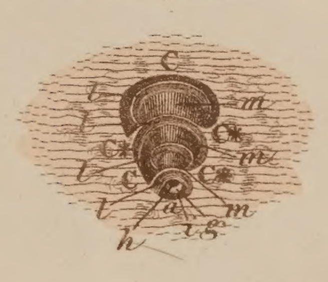

C
t
m
l
C*
C*
m
l
C
C*
t
a
m
h
i
g

Fig. 13.

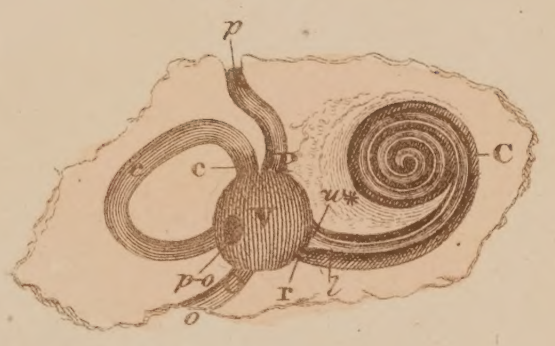


Fig. 7.

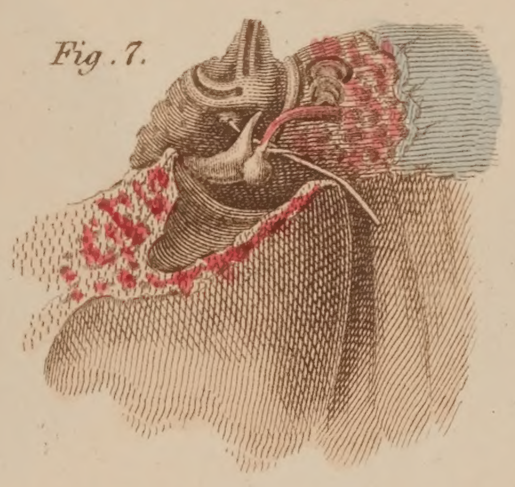


Fig. 9.

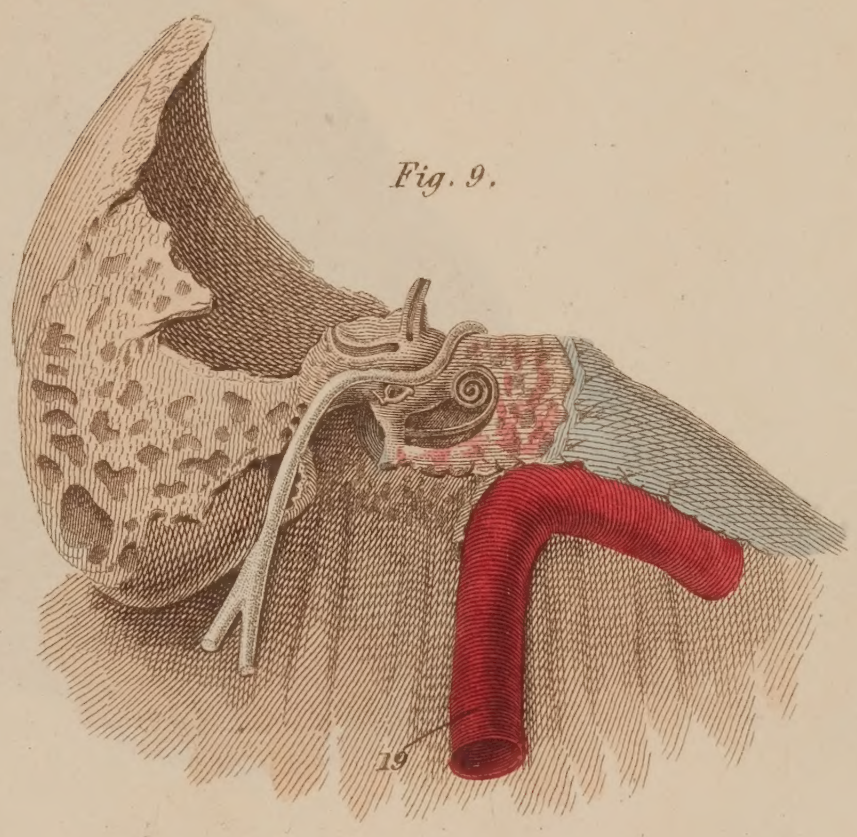


Fig. 5.

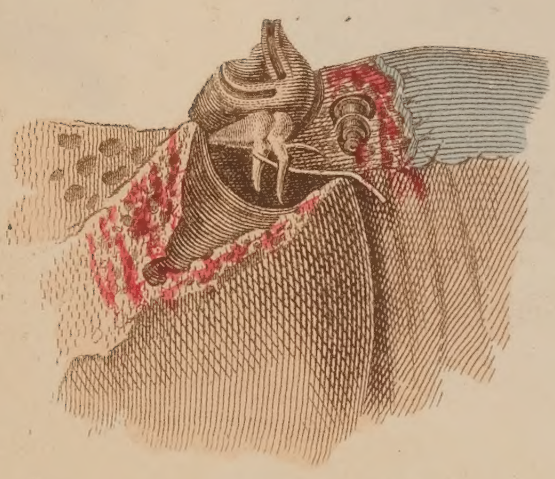


Fig. 8.

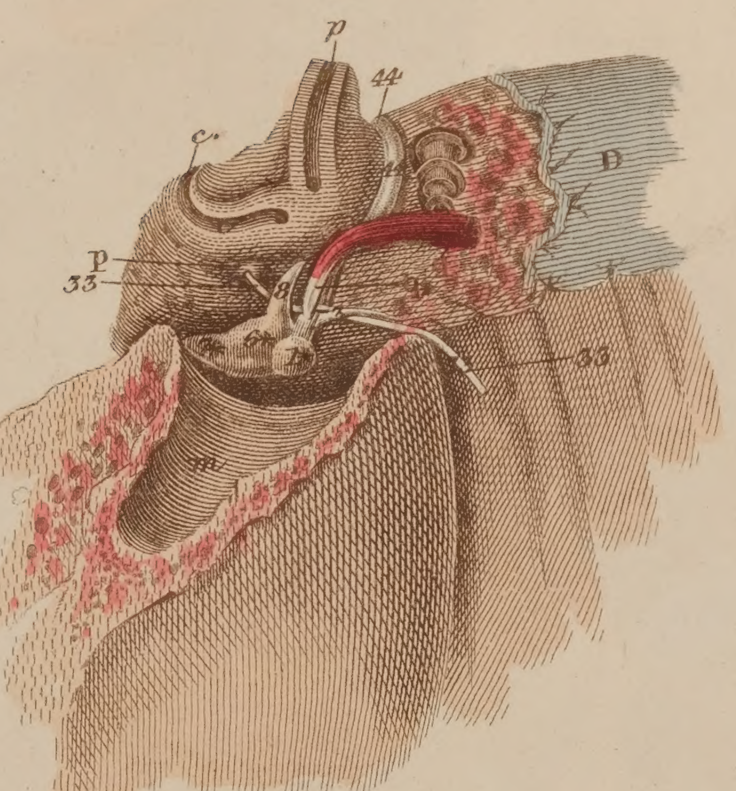

p
44
c
D
P
33
8
33
m

Fig. 6.

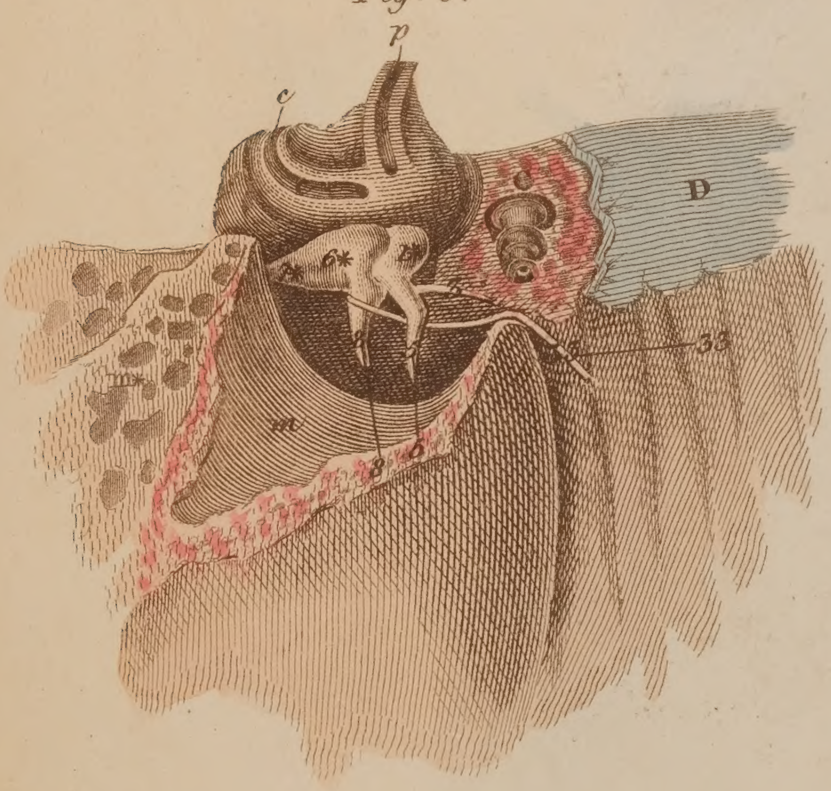

p
c
D
6*
33
m*
m
8
6

Fig. 10.

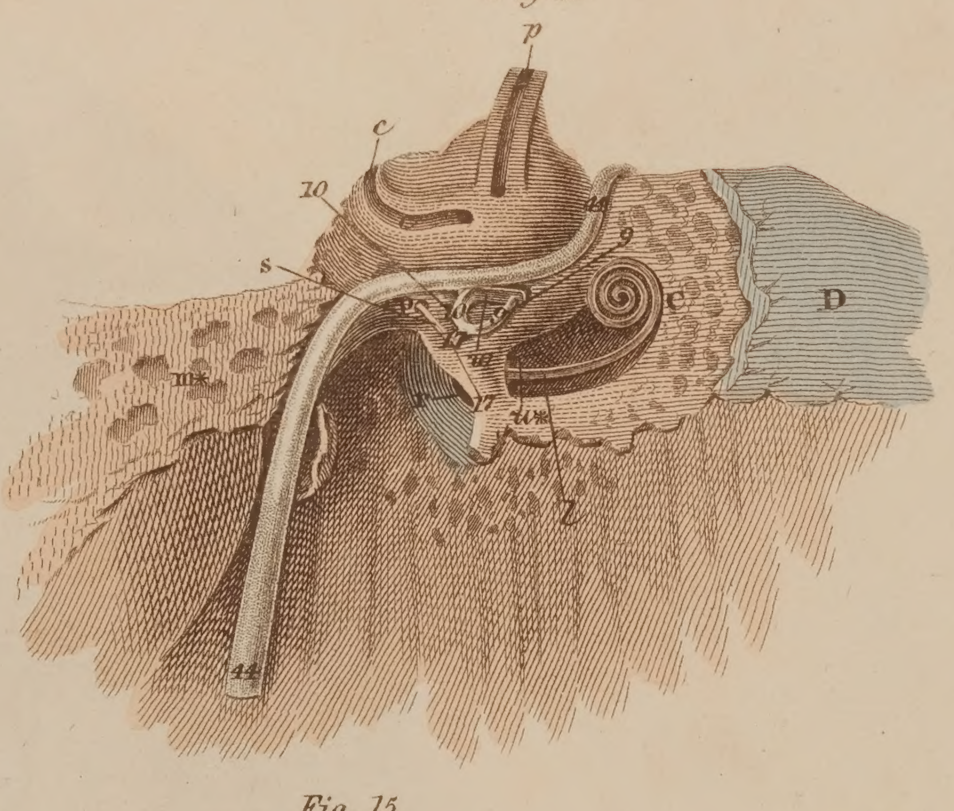

p
c
10
44
s
9
C
D
m*
17
u*
Z
44

Fig. 12.

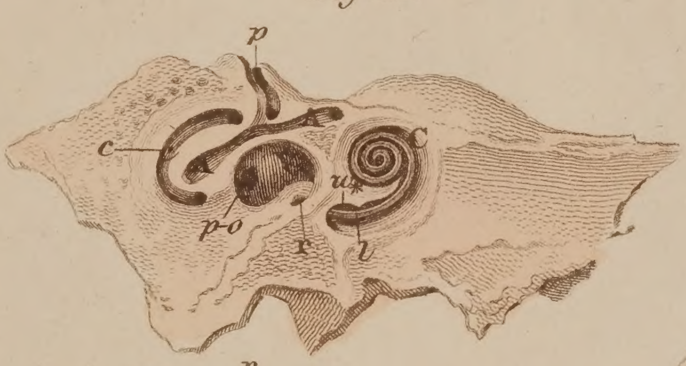


Fig. 16.

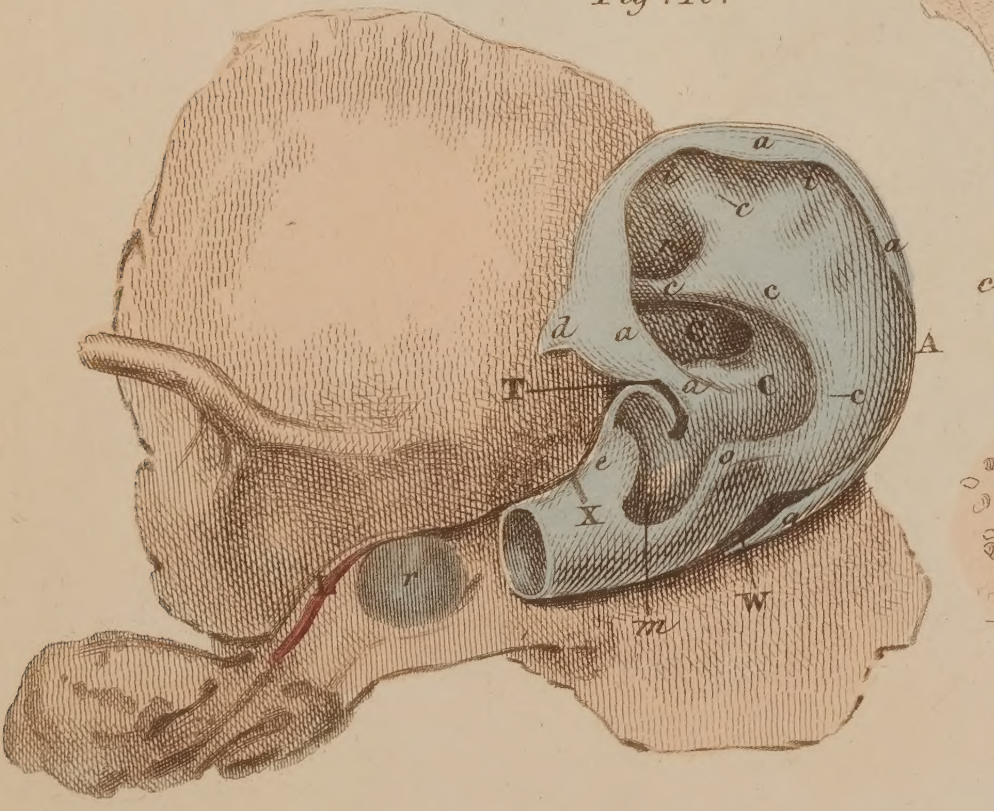

a
c
a
d
a
c
c
A
T
a
C
c
e
o
X
r
m
W

Fig. 15.

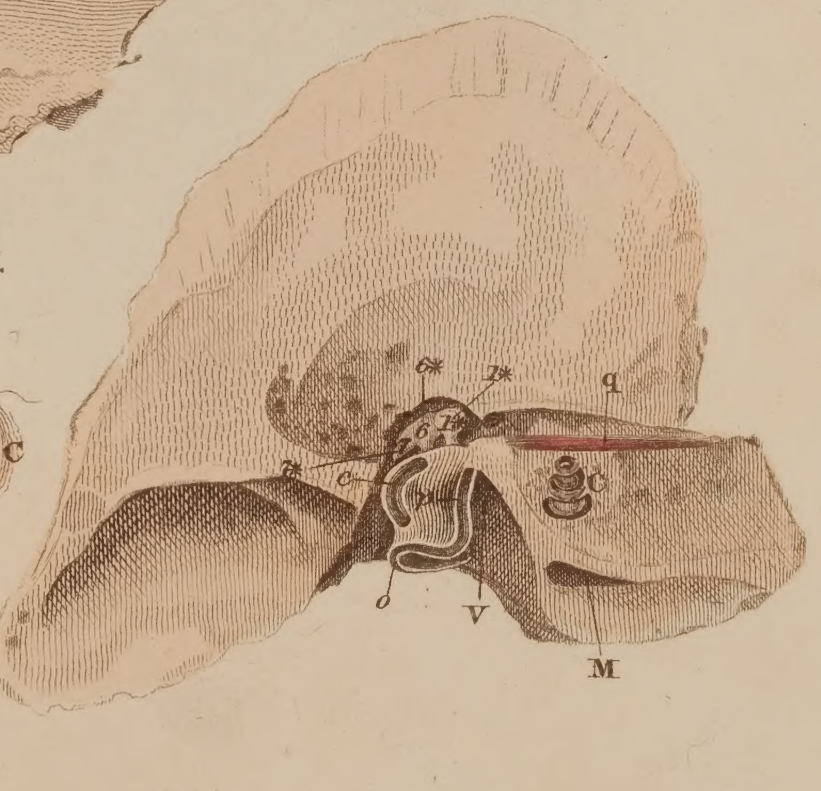


Fig. 17.

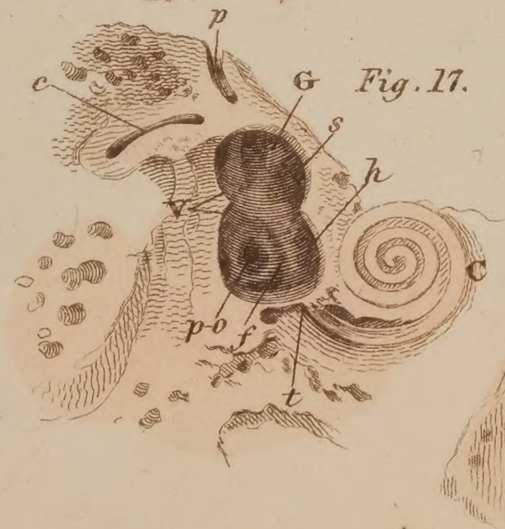

p
c
G
s
h
V
C
p-o
f
t

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Fig. 3.

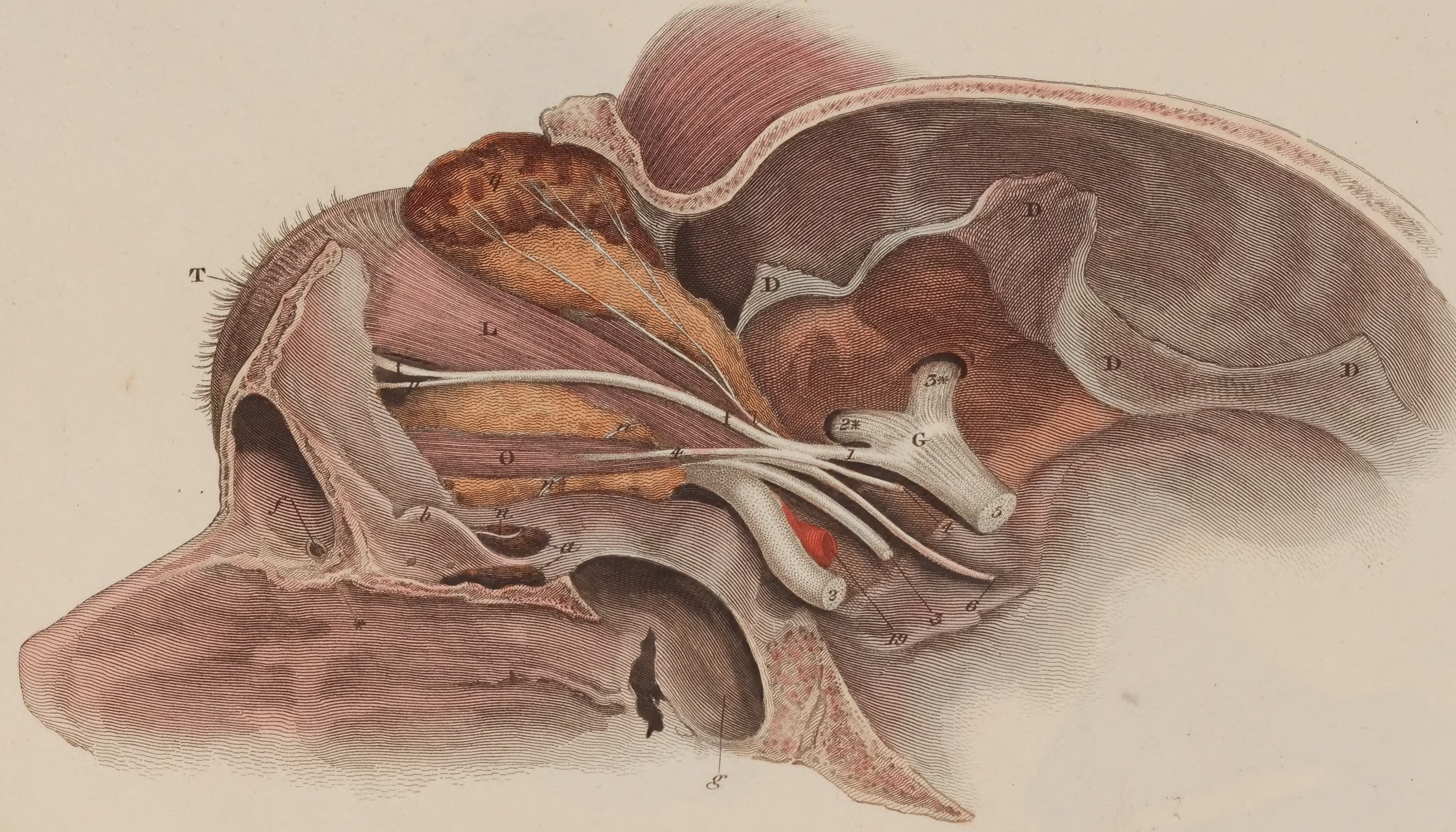
T
V
L
n
O
n
f
b
n
a
g
D
D
D
D
3*
2*
G
1
4
5
3
19
6

Fig. 1.

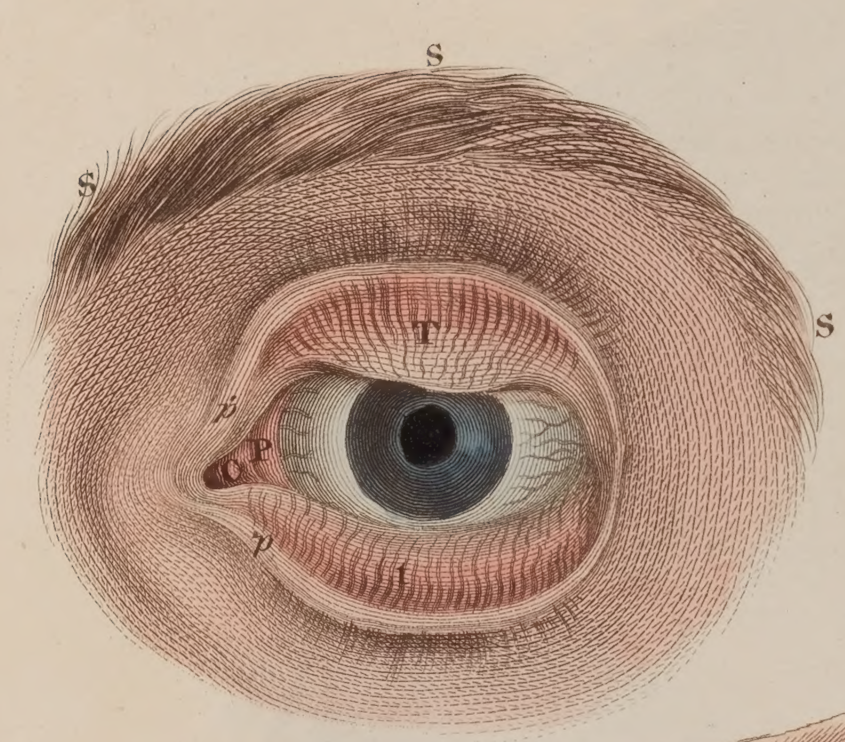

Fig. 2.

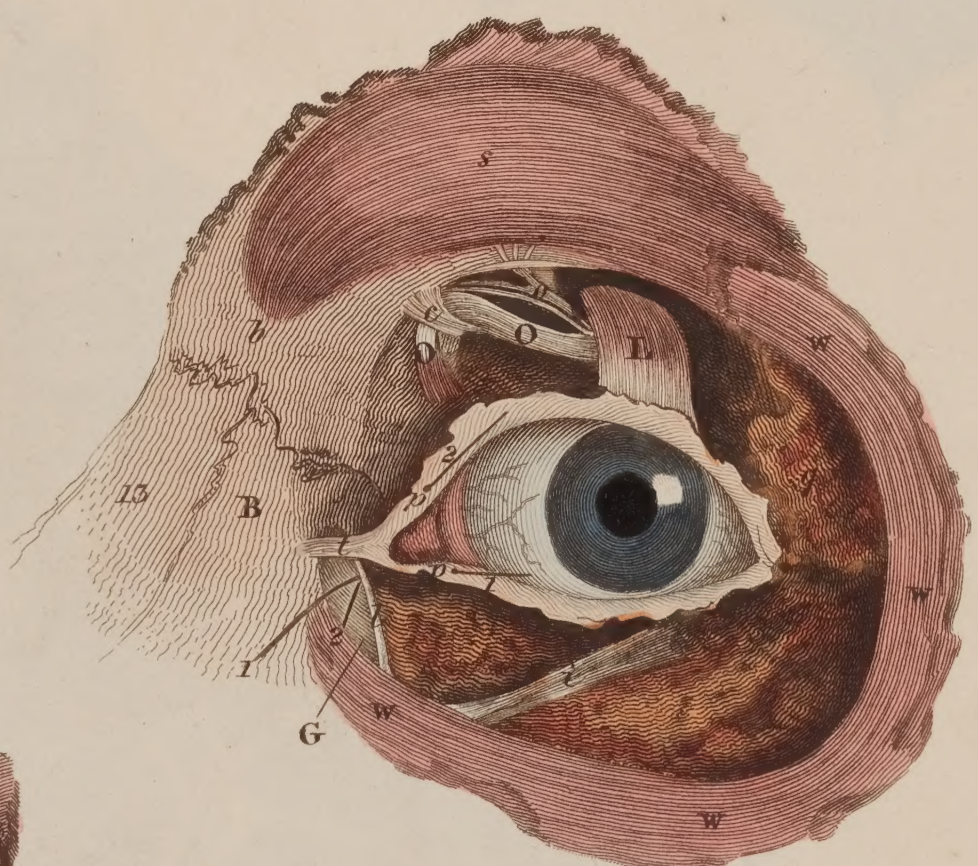
s
b
O
O
L
w
13
B
w
I
G
w
w

Fig. 4.

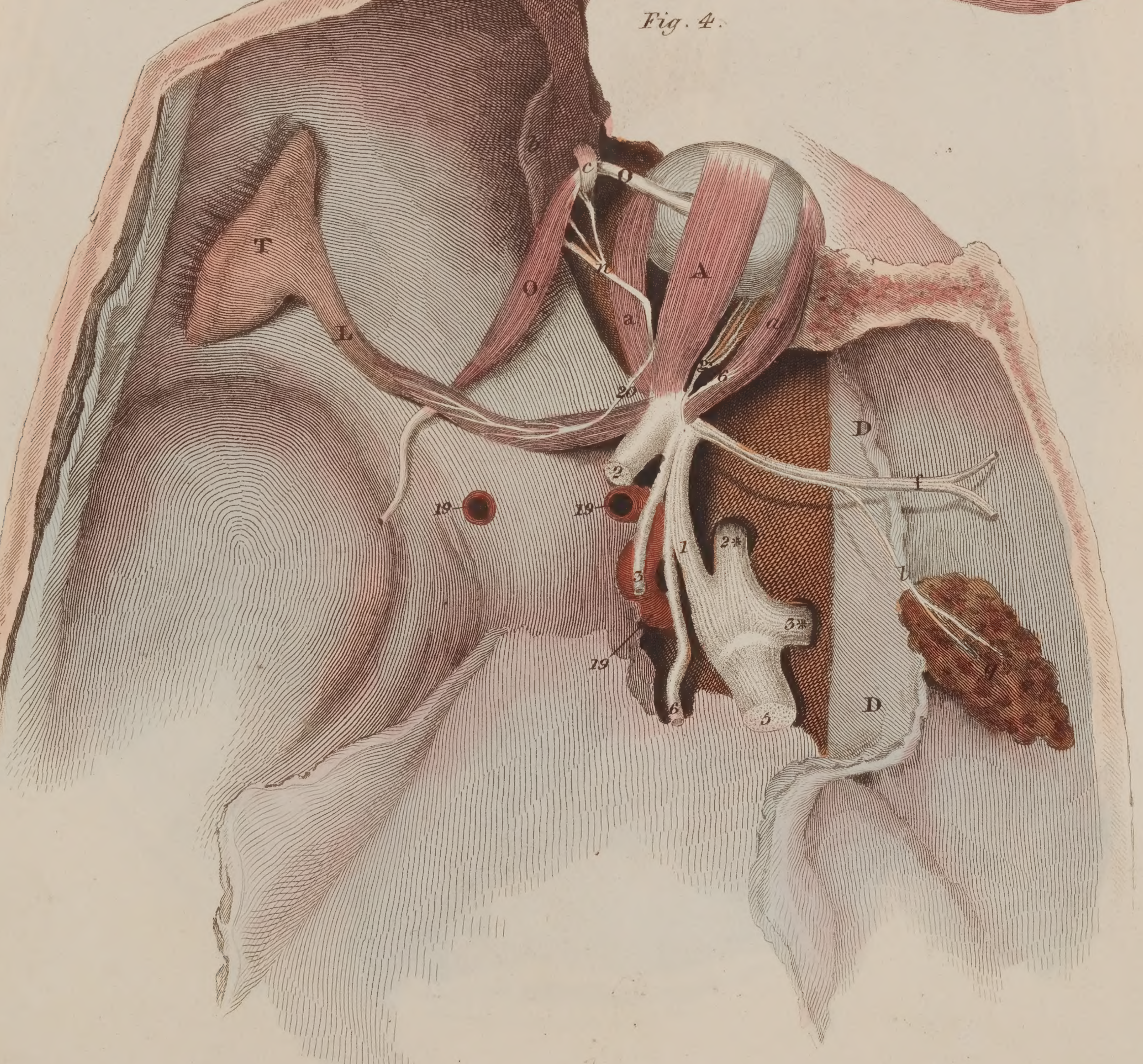
b
c
O
T
O
A
L
a
20
6
D
2
19
19
1
2*
3
3*
19
6
5
D

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Fig. 2.

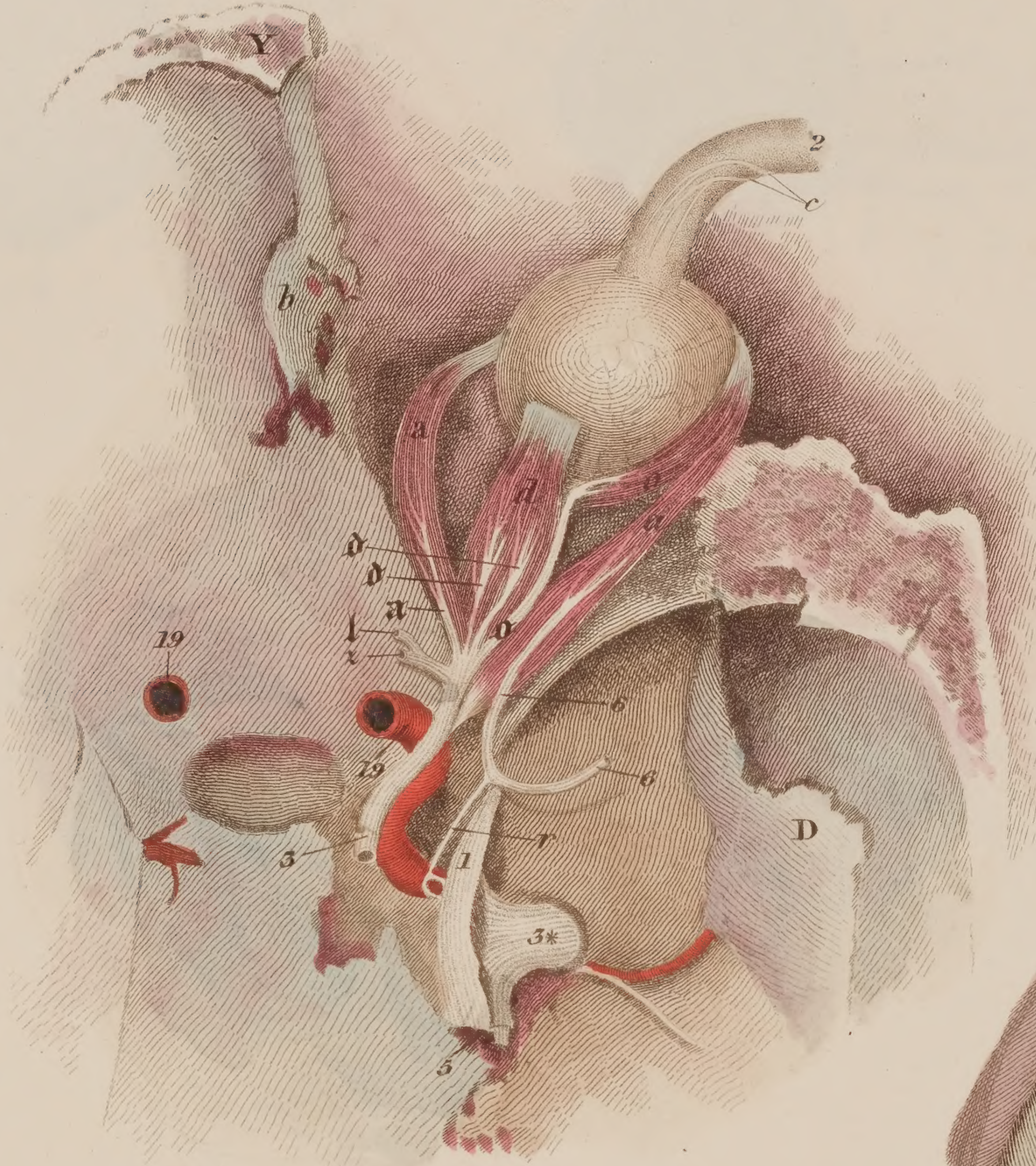
Y
b
2
c
a
d
o
19
19
3
1
r
e
D
3*
5

Fig. 3.

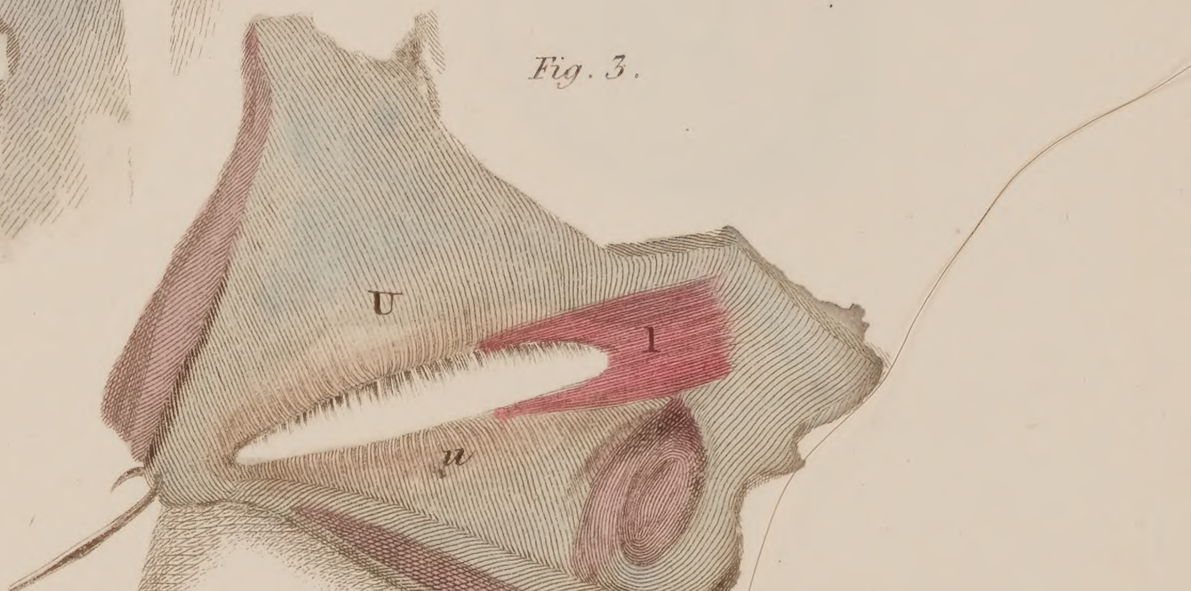

Fig. 1.

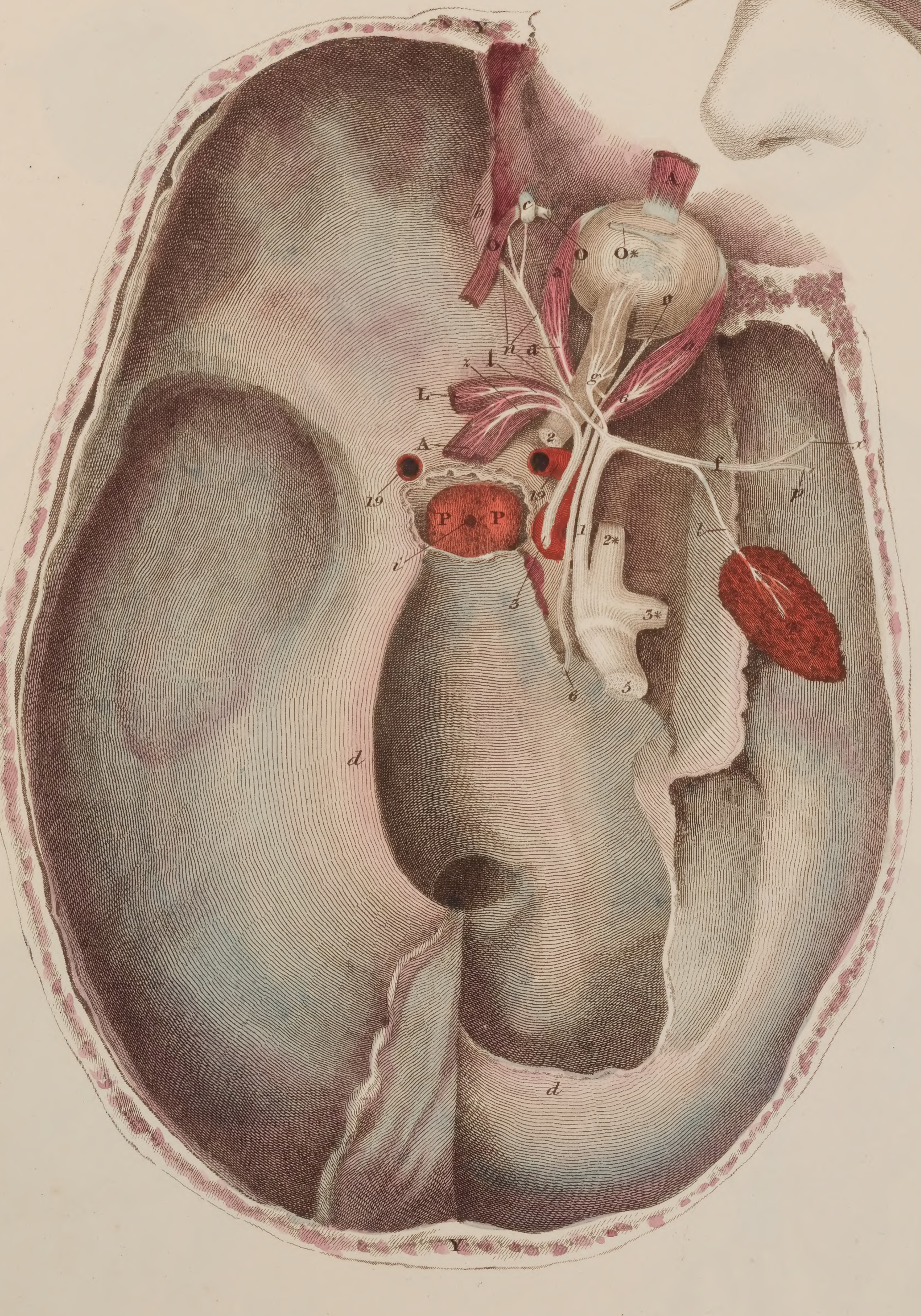
Y
A
b
c
O
O
O*
a
n
g
L
2
A
19
19
P
P
i
3
1
2*
3*
5
6
f
r
p
t
d
d
Y

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Fig. 11.

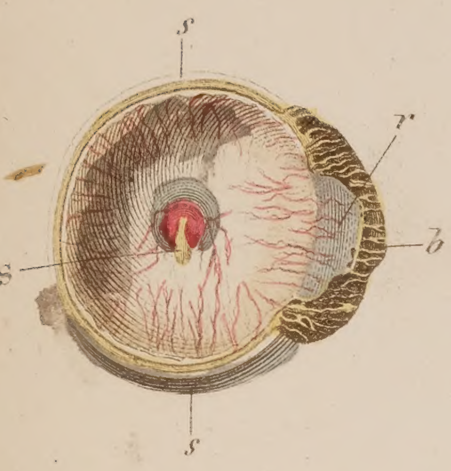


Fig. 10.

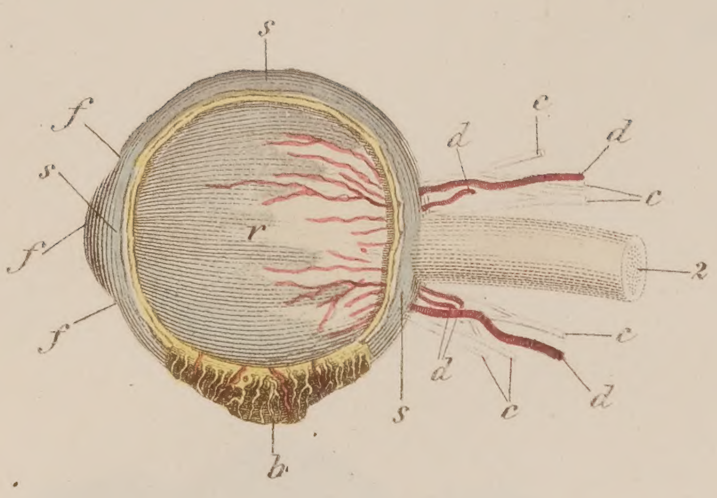
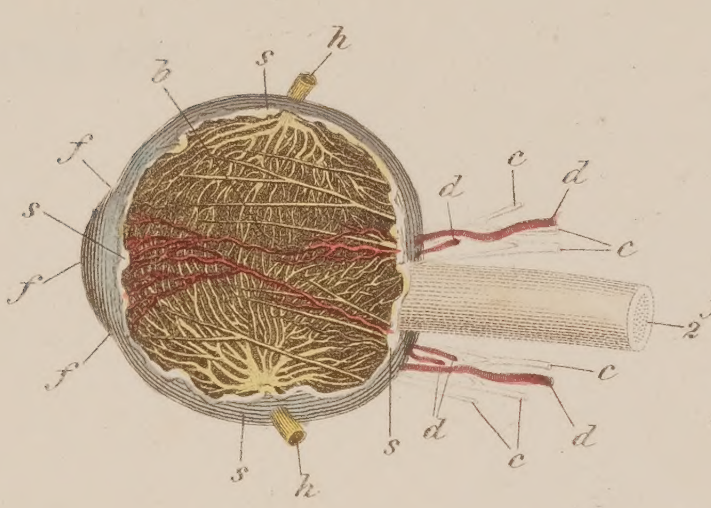

s
f
s
f
f
r
d
c
d
c
2
d
c
d
c
s
b

Fig. 8.


b
s
h
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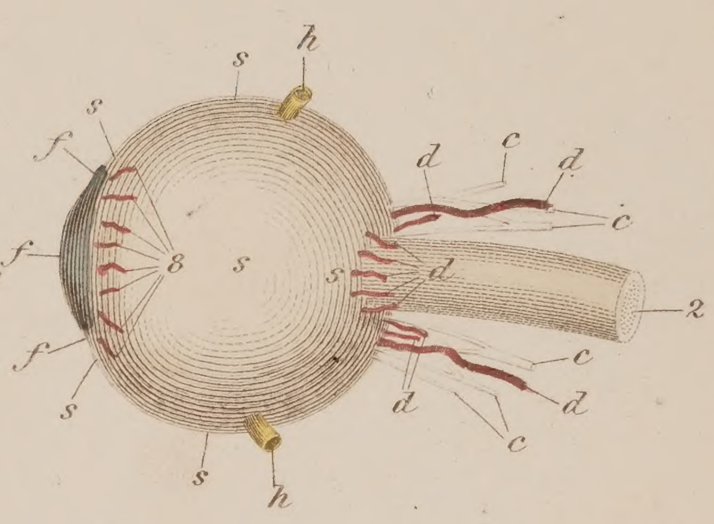
s
f
f
d
c
d
c
2
c
d
c
d
s
s
h

Fig. 1.


h
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f
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s
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d
c
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c
2
c
d
d
c
s
h

Fig. 6.

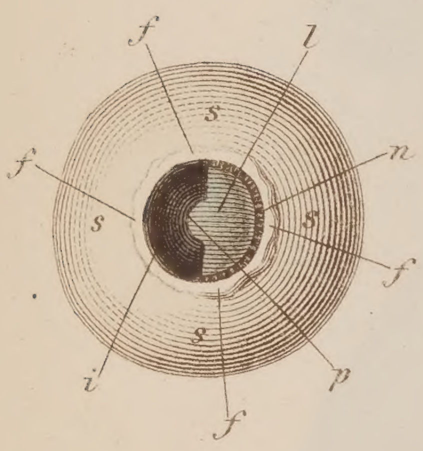

f
l
f
s
n
s
s
f
s
i
p
f

Fig. 7.

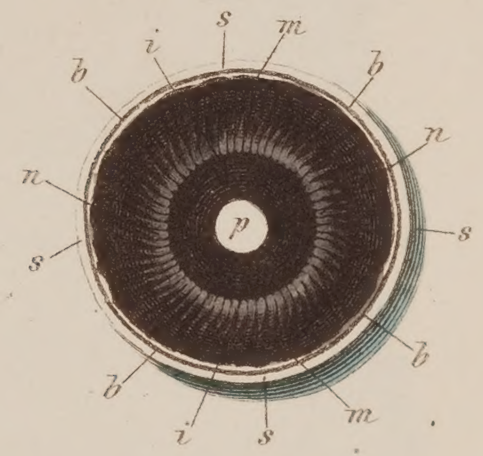

s
i
m
b
b
n
n
s
p
s
b
b
i
s
m

Fig. 9.

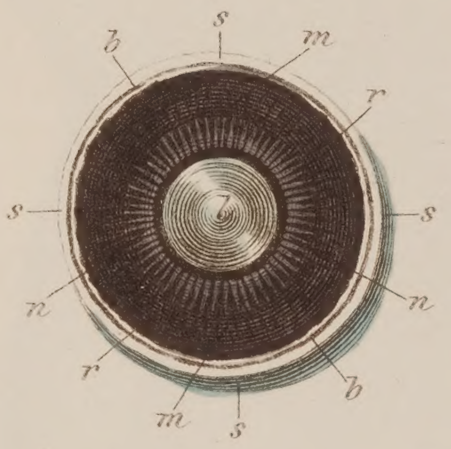

s
b
m
r
s
l
s
n
n
r
b
m
s

Fig. 12.

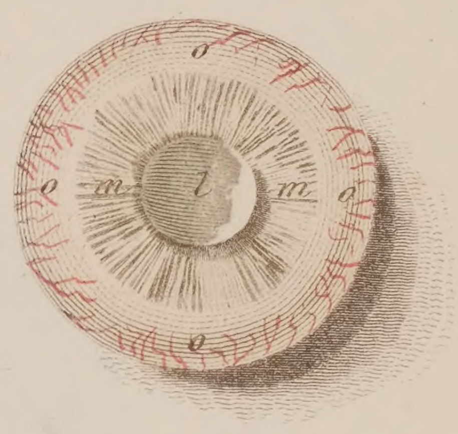


Fig. 4.

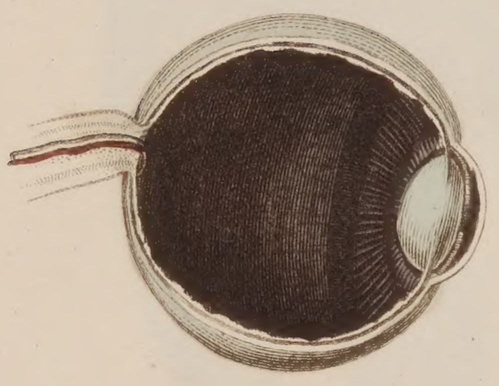


Fig. 14.

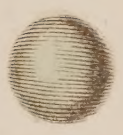


Fig. 13.

Fig. 2.

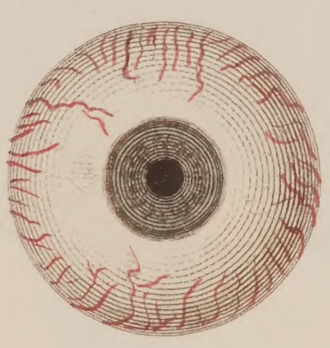
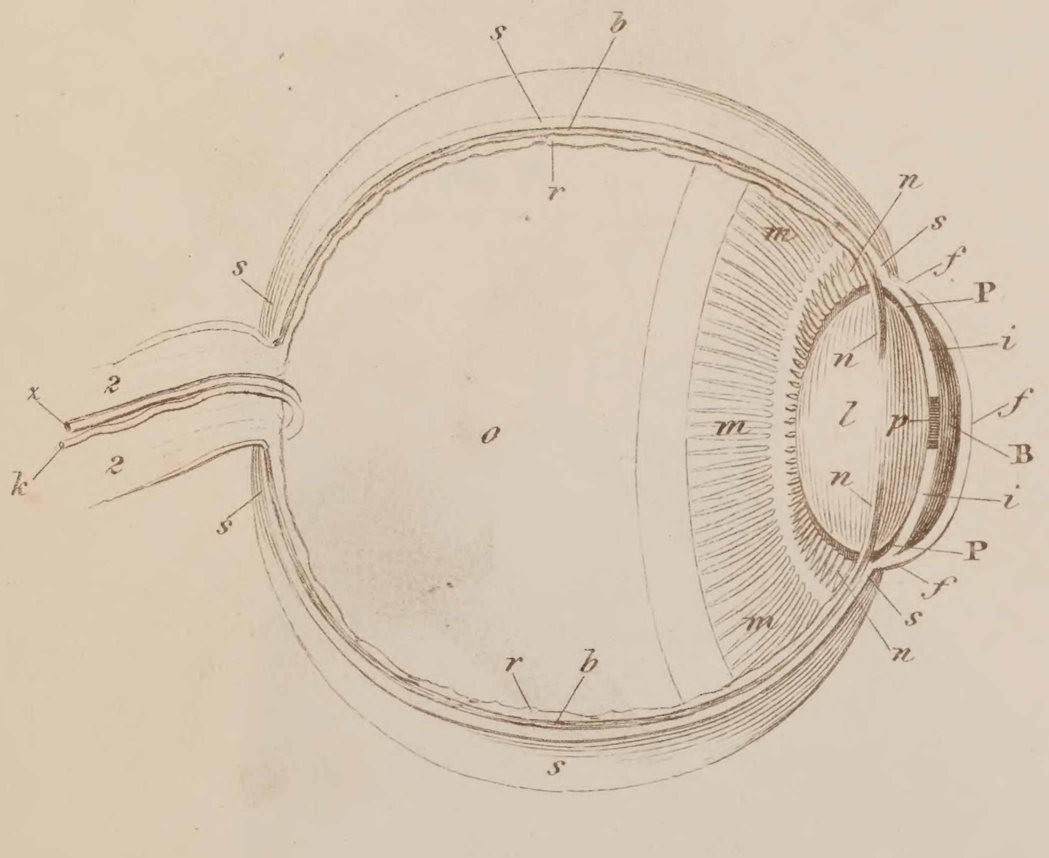


Fig. 5.


s
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m
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P
i
x
2
o
m
n
l
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i
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m
s
n
r
b
s

Fig. 3.

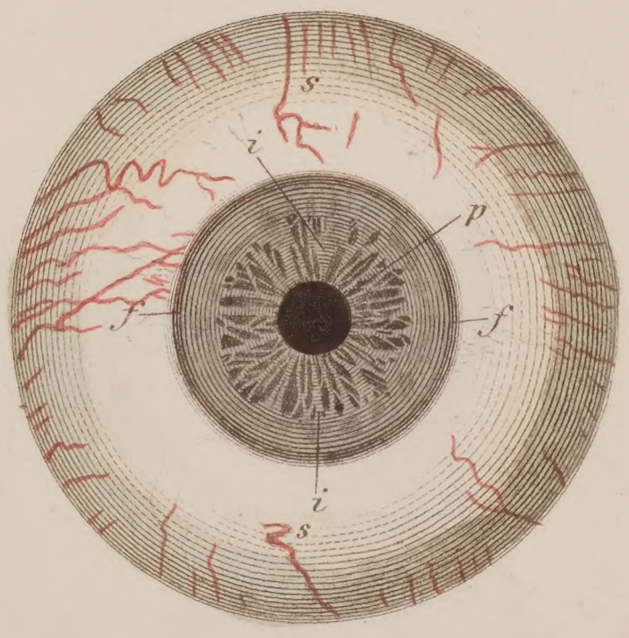
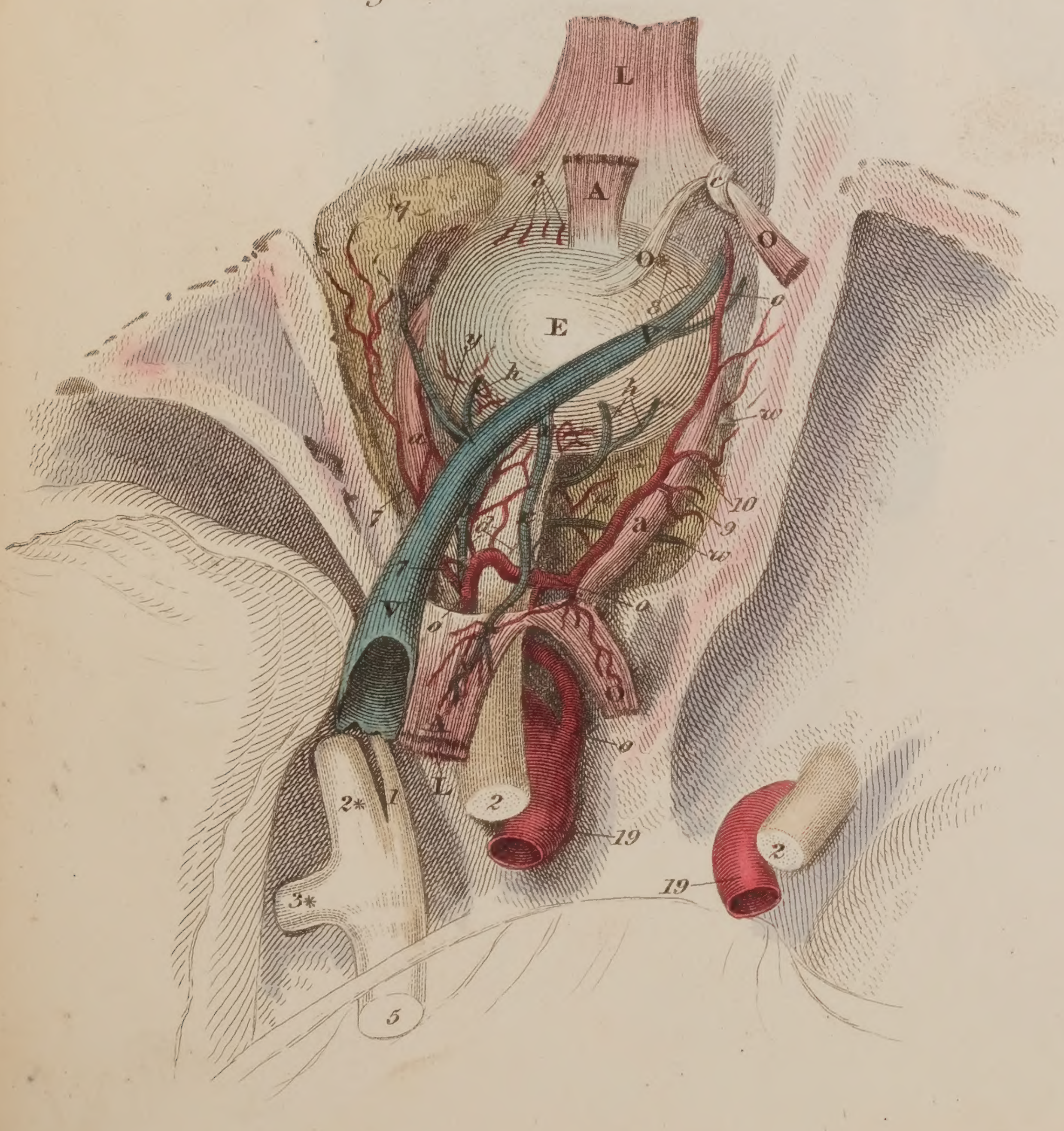


Fig. 16.


L
s
A
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c
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O
s
o
E
y
h
h
w
a
7
10
9
a
w
7
V
o
o
L
2*
1
L
2
19
o
3*
19
2
5

Fig. 15.

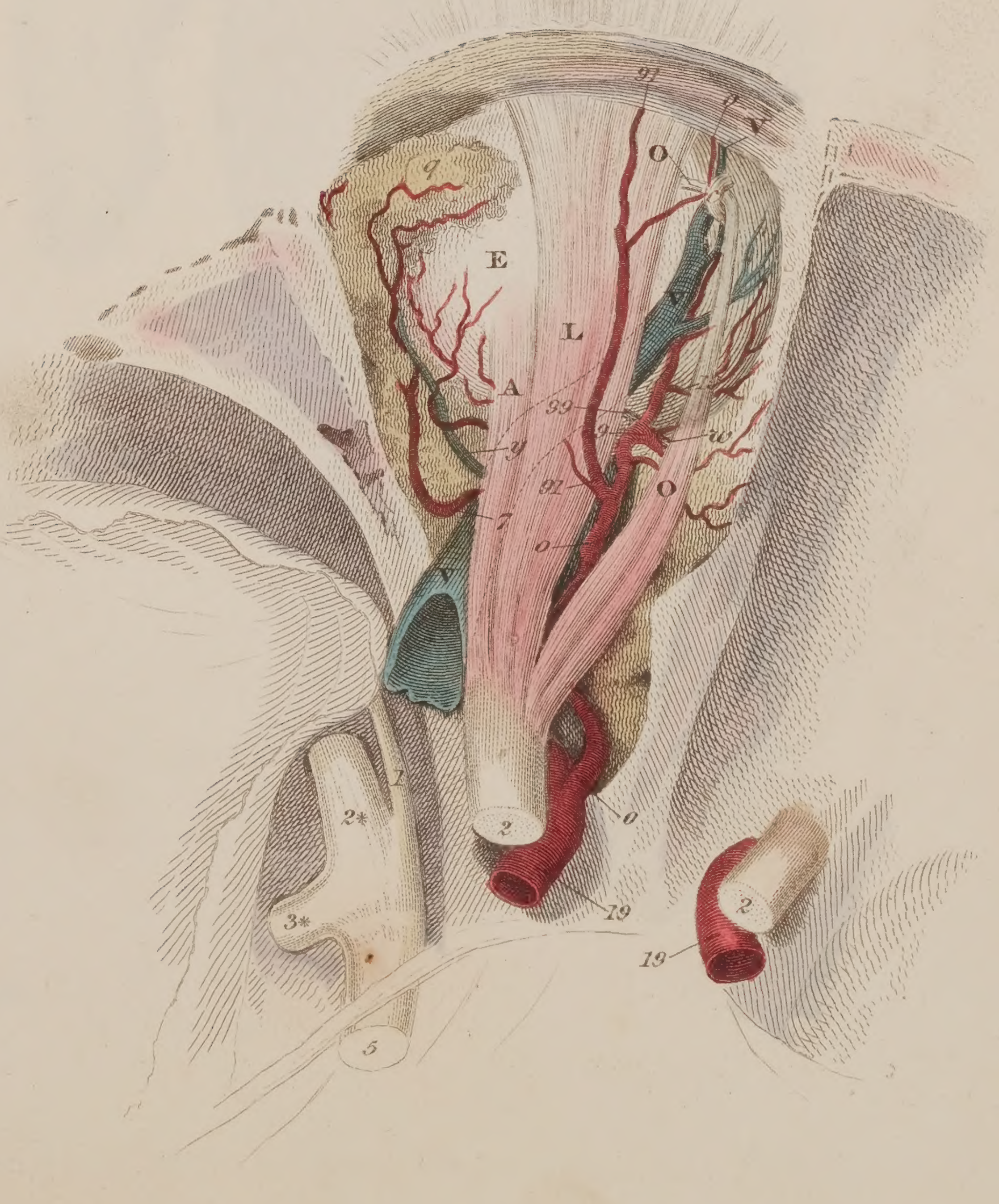
91
O
q
E
L
V
A
99
y
w
91
O
7
o
V
2*
1
2
o
3*
19
19
2
5

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PLATE XIII.

Fig. 3.

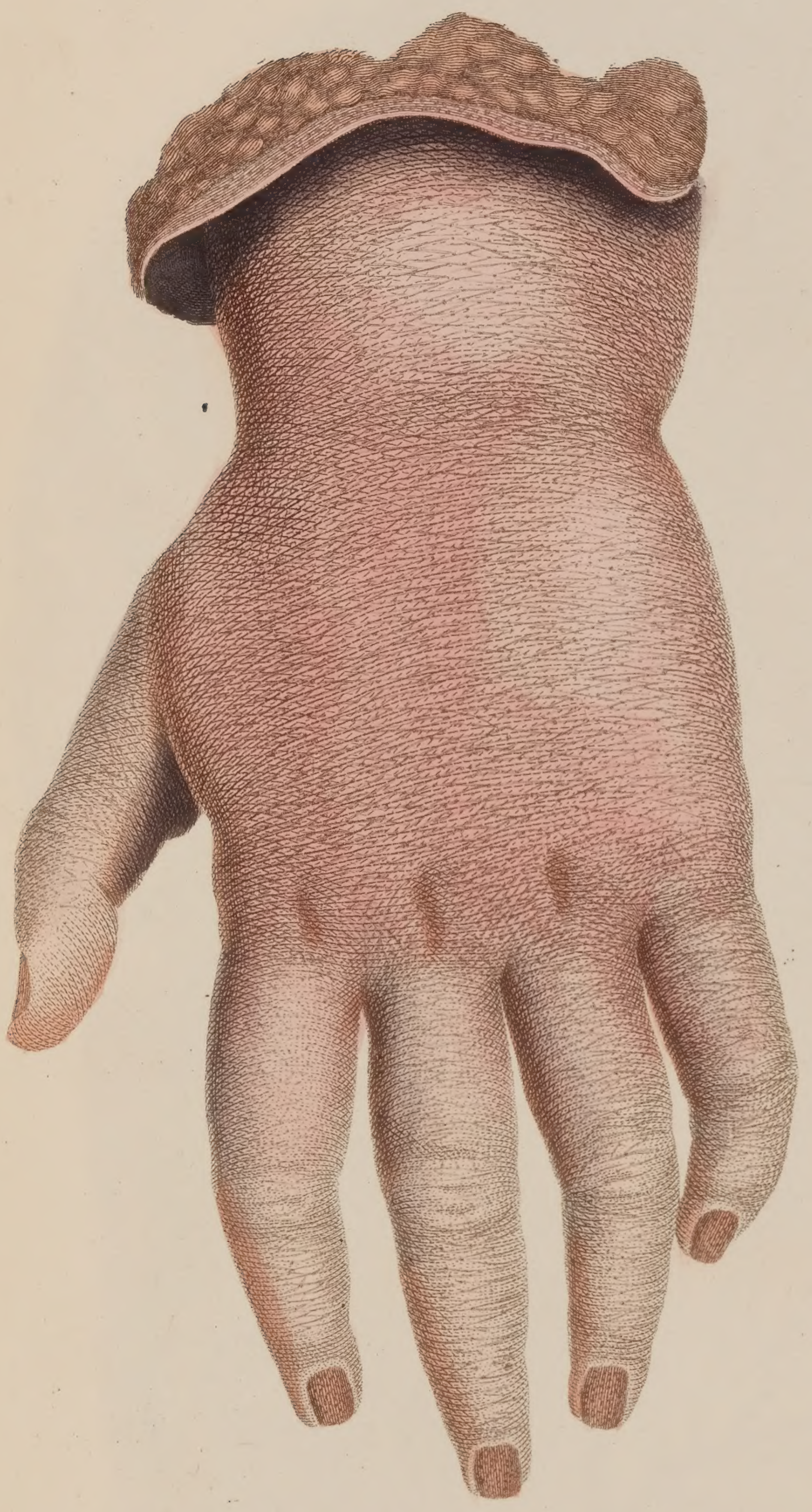


Fig. 1.

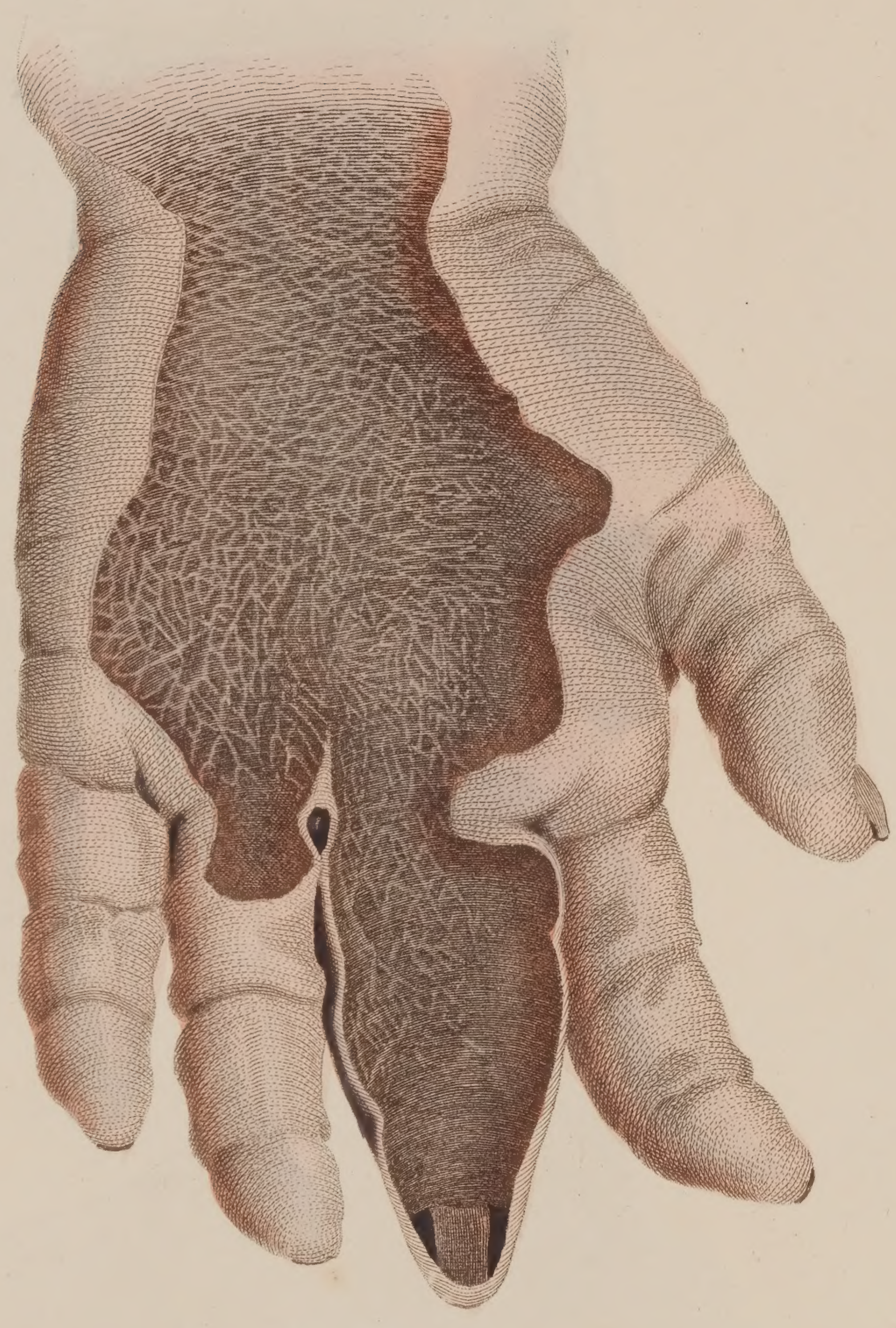


Fig. 4.

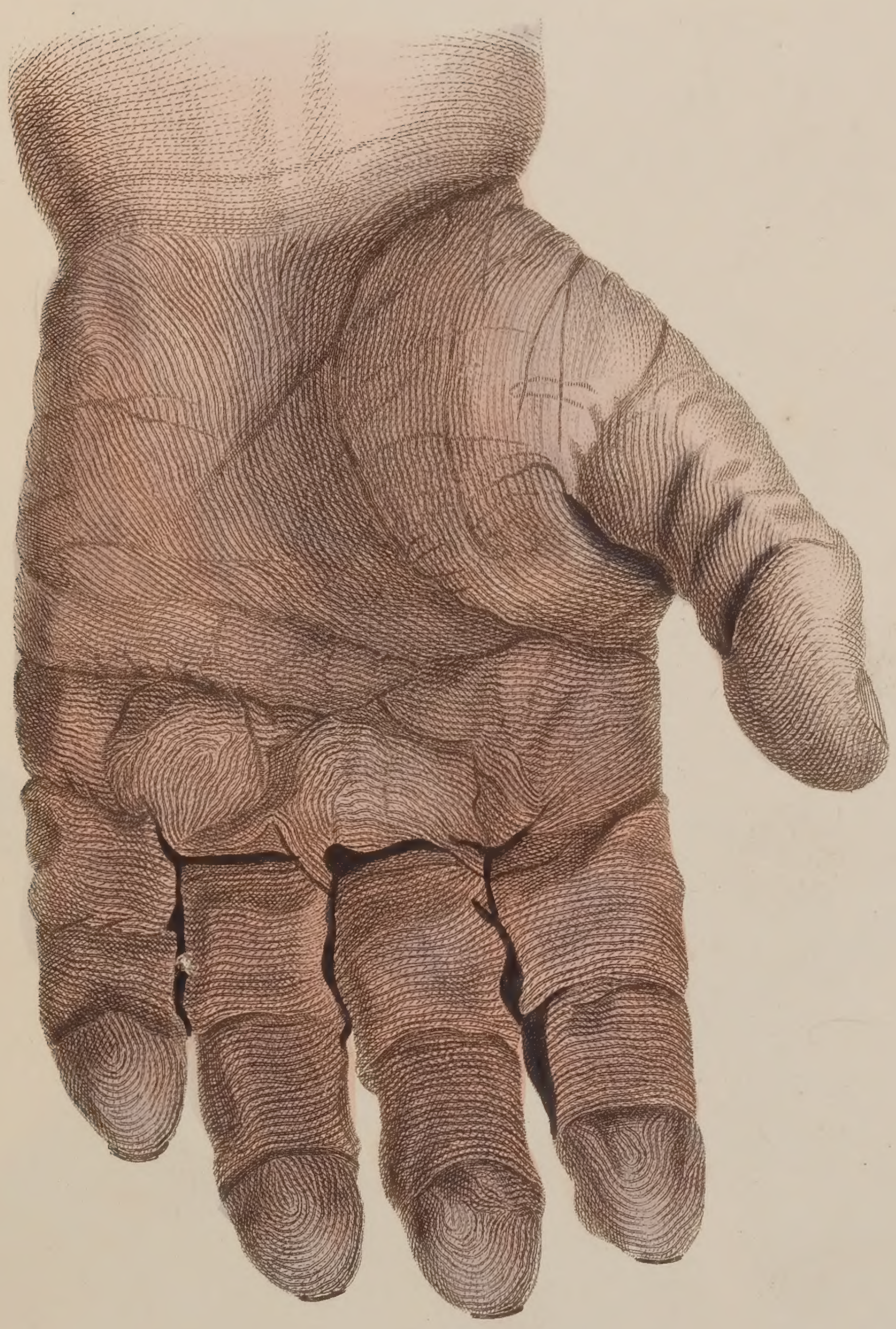
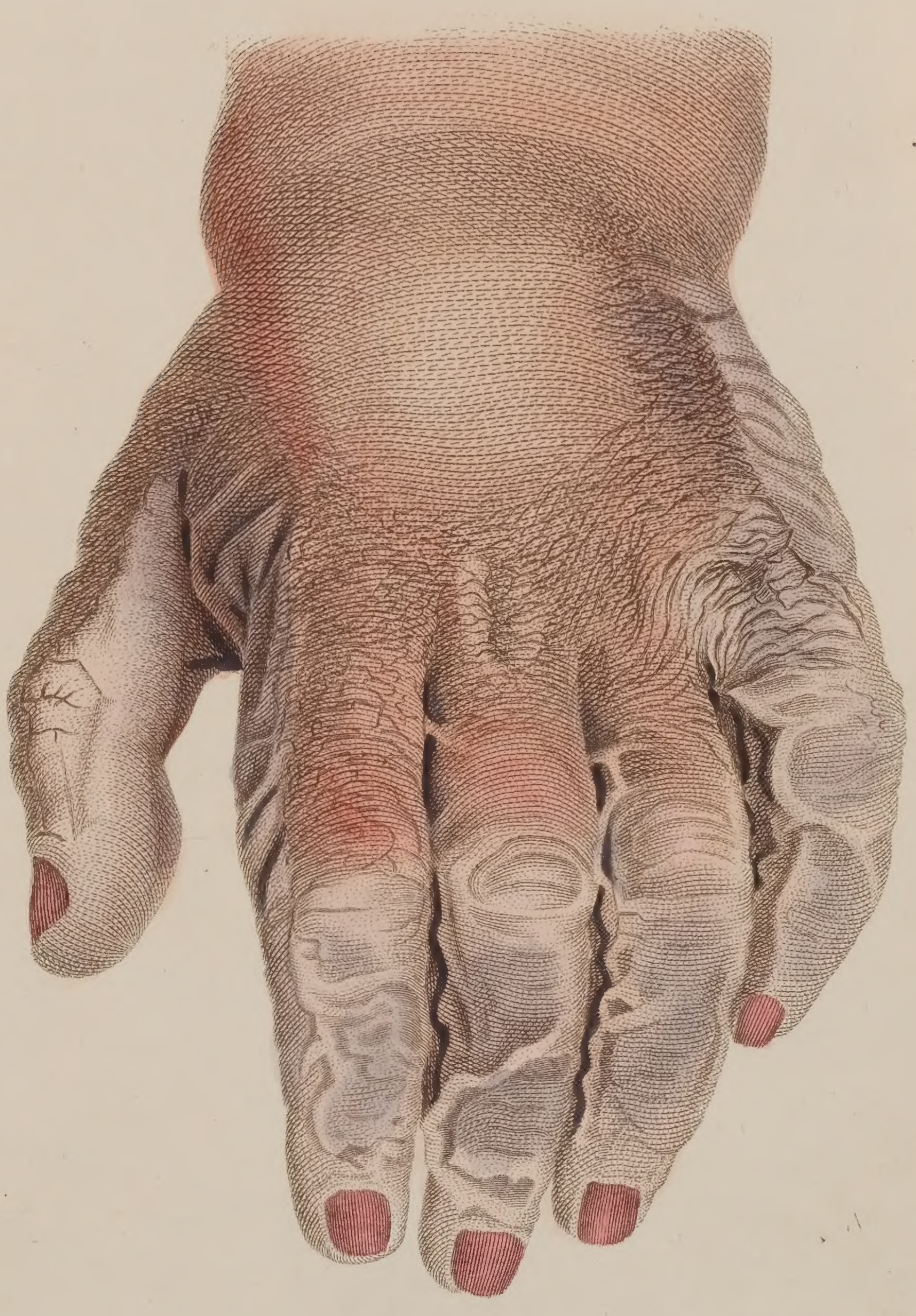


Fig. 2.



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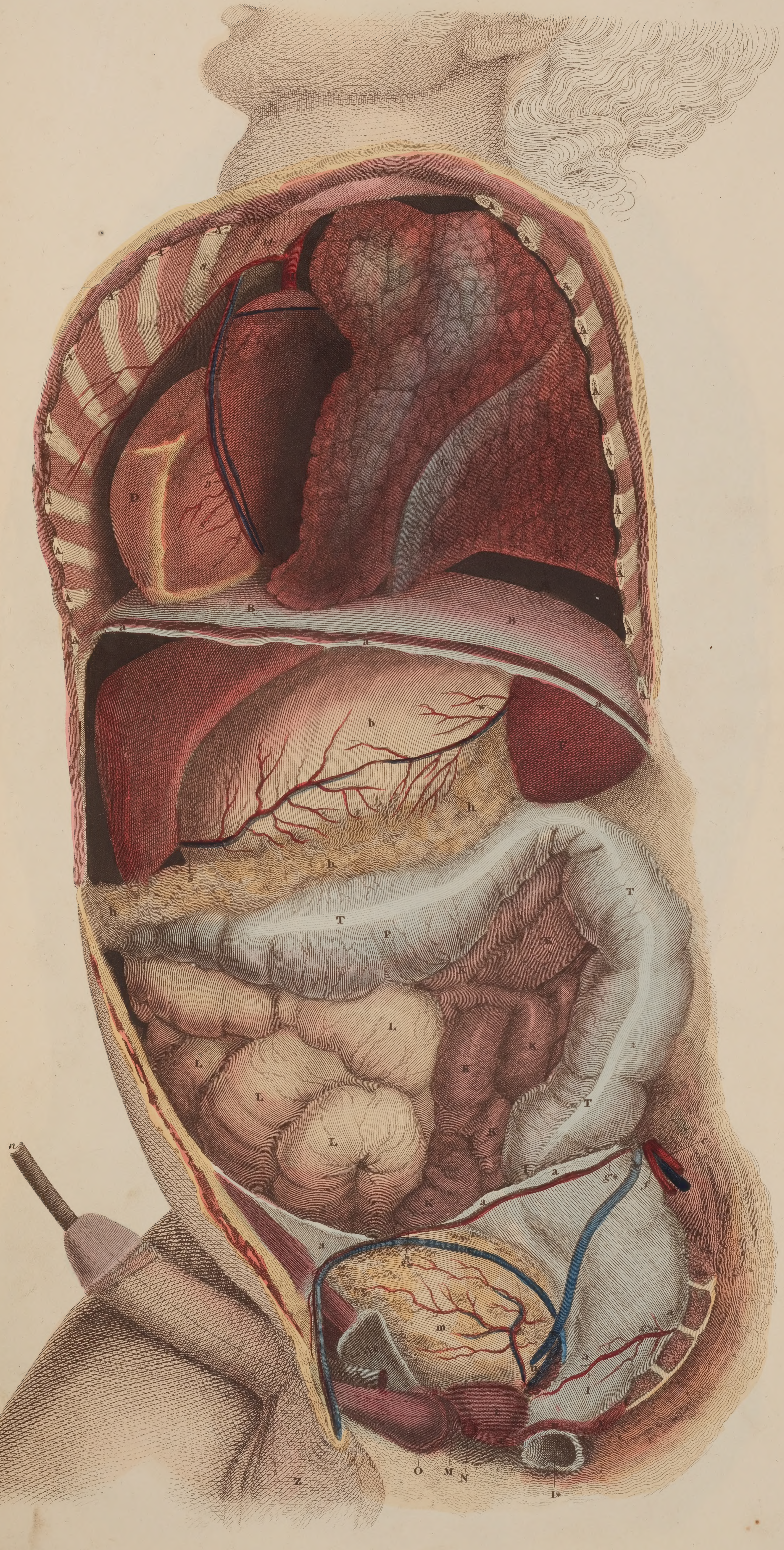
A
H
D
G
B
B
a
a
a
b
w
F
h
h
h
s
T
T
P
K
K
K
K
K
L
L
L
L
T
i
I
a
g*
f
c
n
a
a
g*
m
A*
X
B*
a
a
I
O
M
N
I*
Z

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PLATE XV.

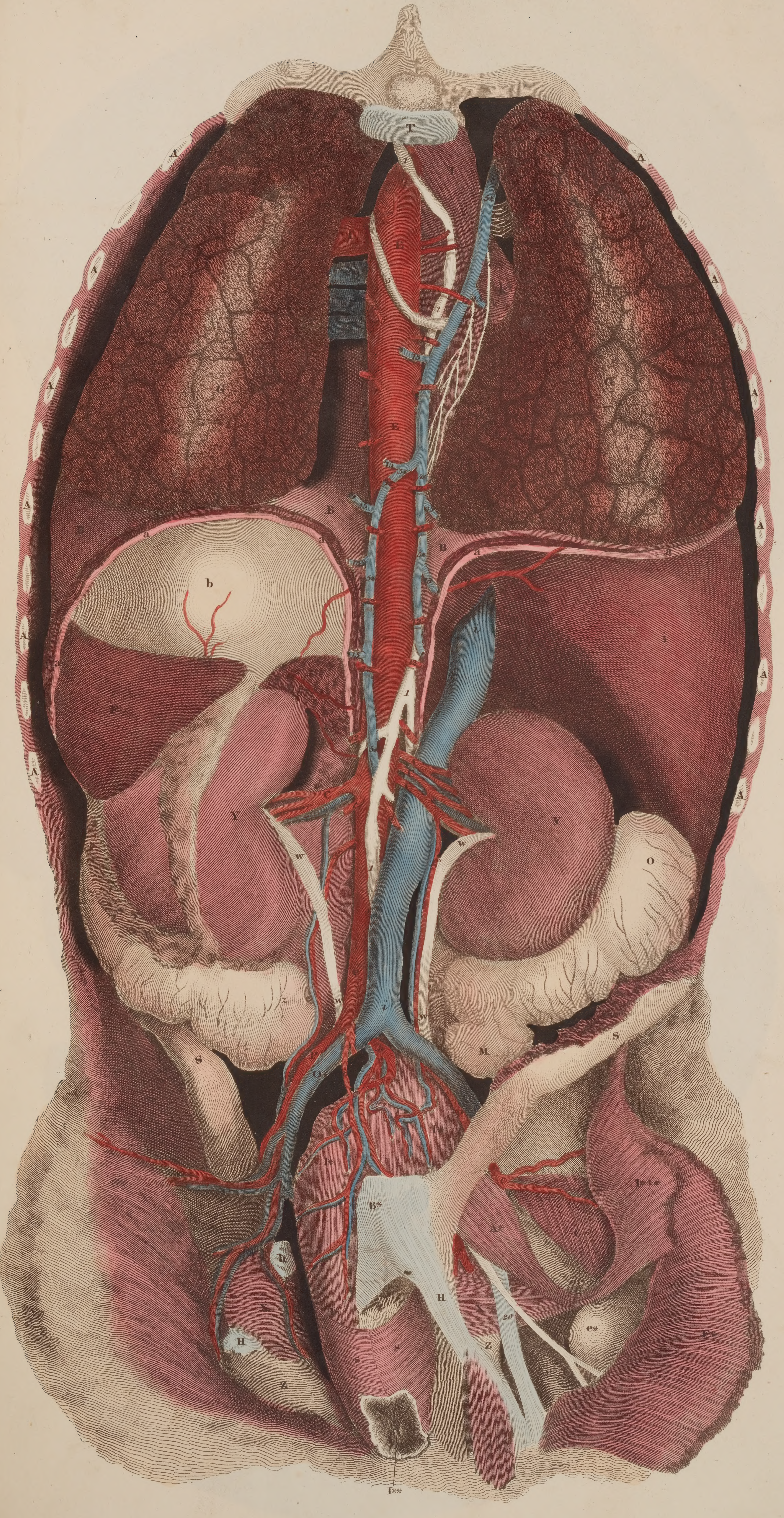
T
A
G
E
K
B
a
b
F
i
C
Y
W
O
Z
S
M
O*
I*
B*
A*
C*
I**
H
X
20
e*
F*
I**

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Fig. 2.

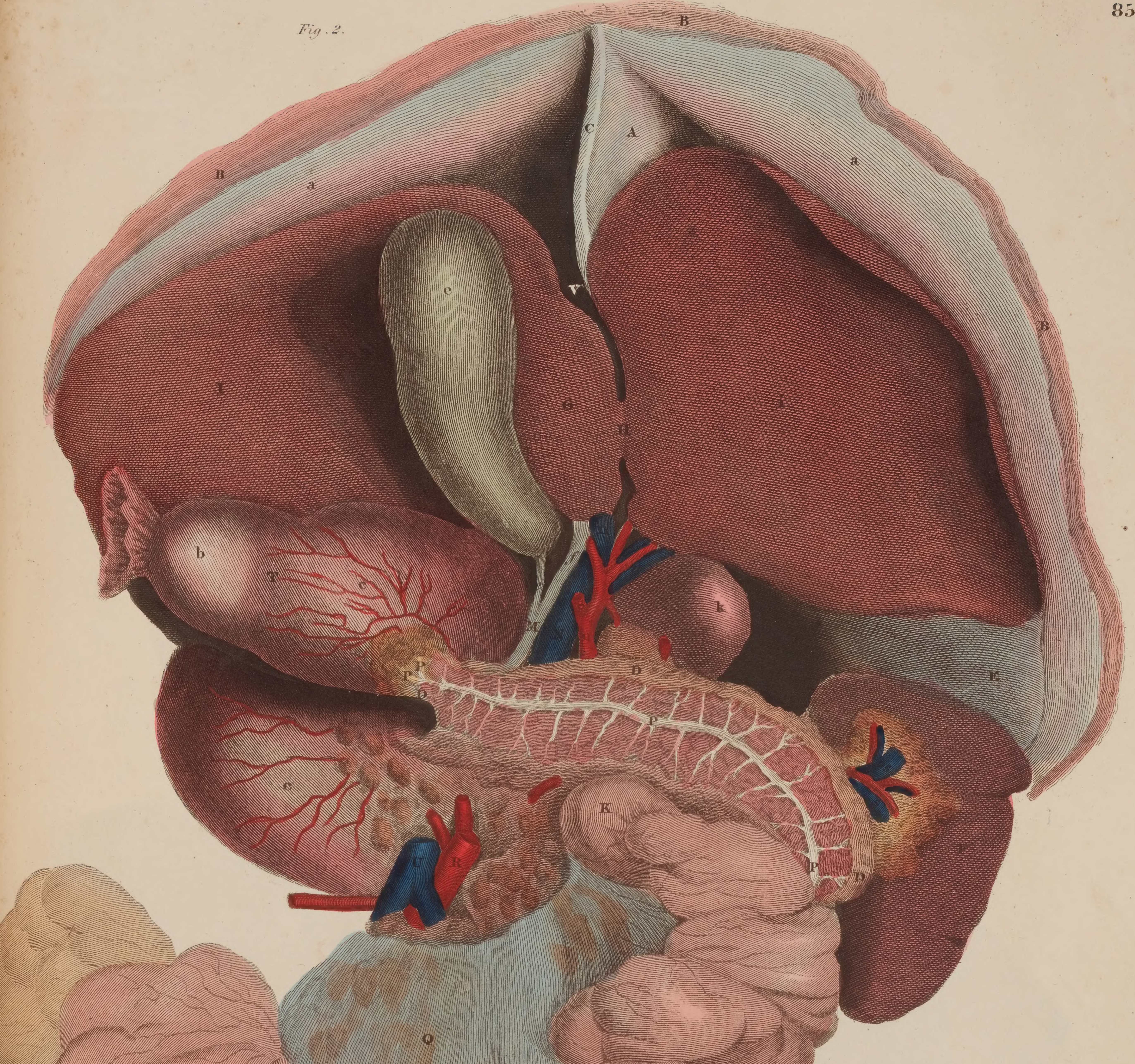

B
C
A
B
a
a
V
e
I
o
n
I
B
b
T
c
f
e
M
N
m
k
D
P
p
O
P
c
K
E
U
R
P
D
Q

Fig 3.

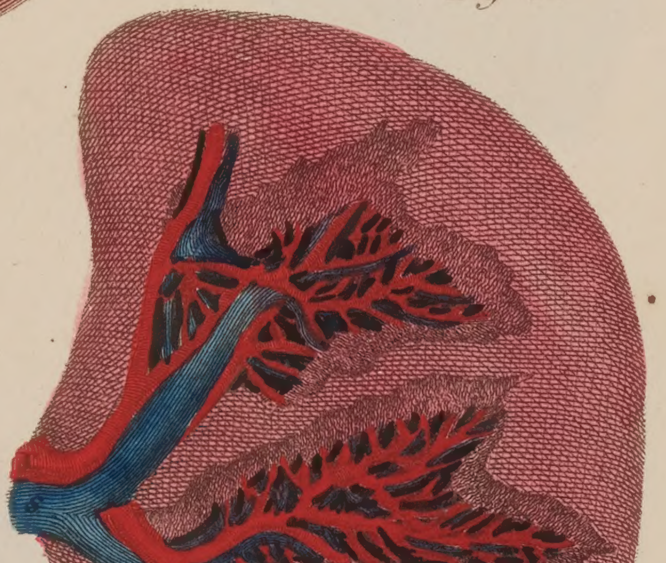


Fig. 1.

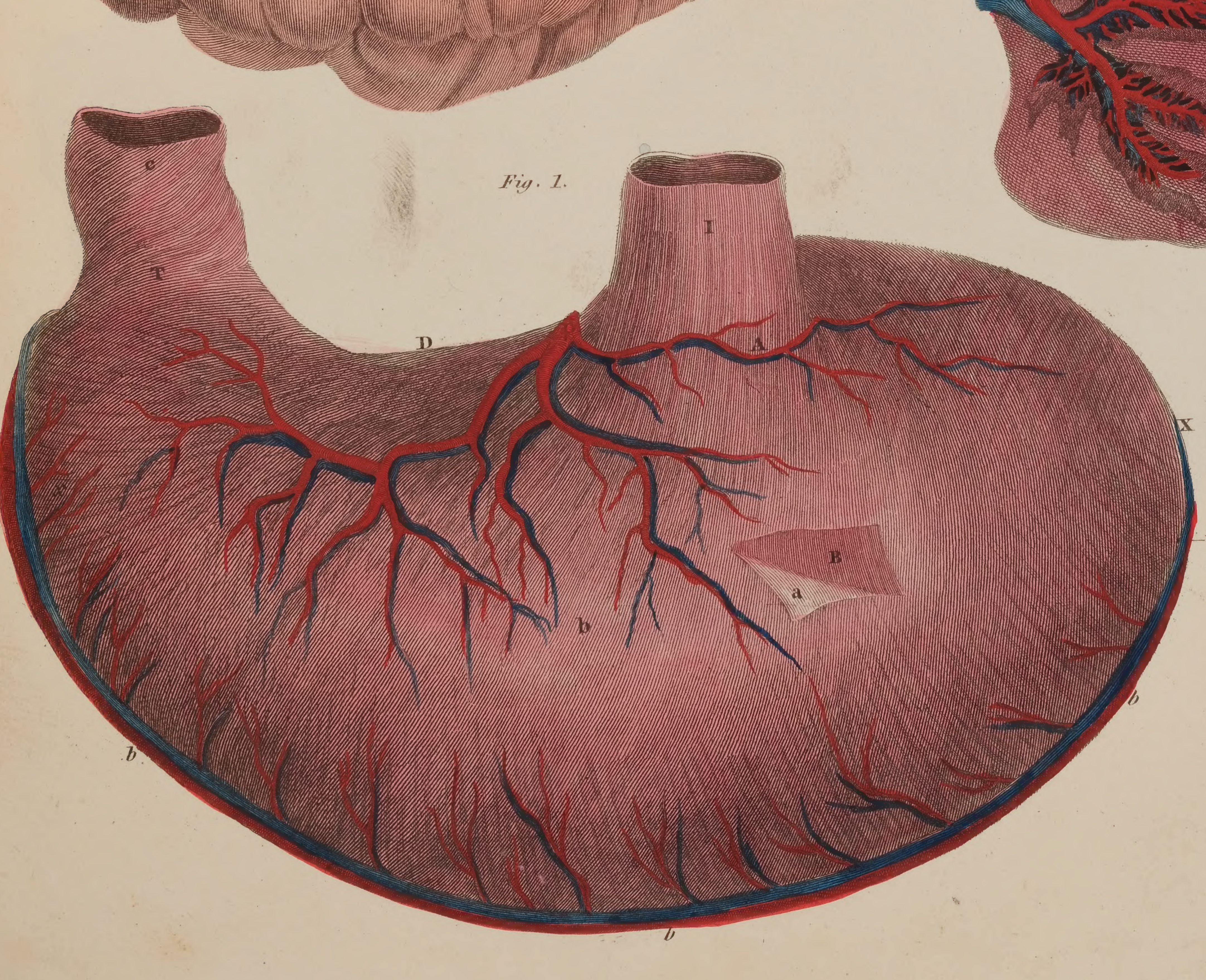
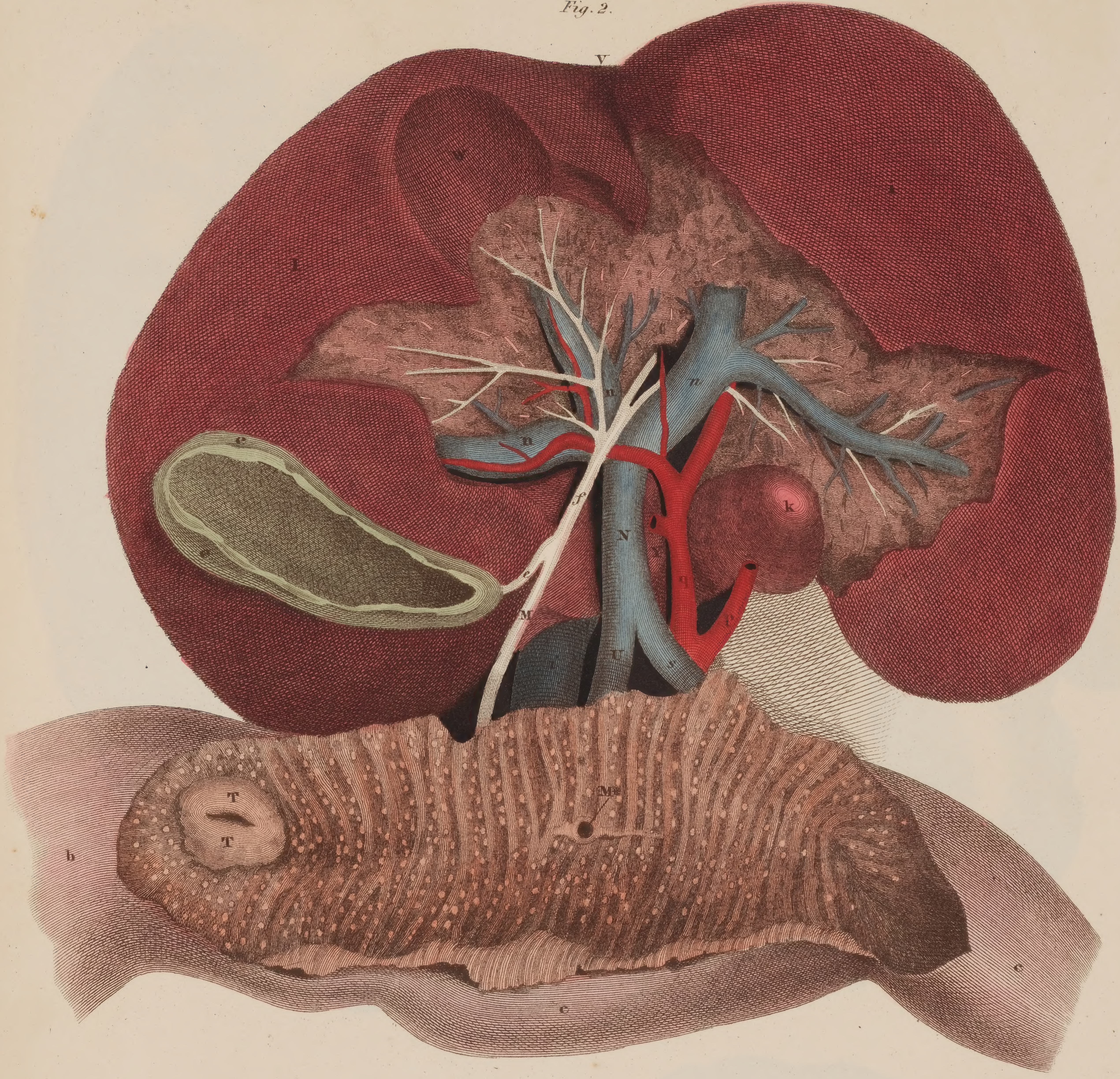

c
T
D
I
A
X
S
W
B
a
b
b
b
b

PLATE XVII.

Fig. 2.


V
w
L
n
n
n
e
e
e
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M
N
Y
k
q
p
U
r
T
T
Mc
b
c
c

Fig. 1.

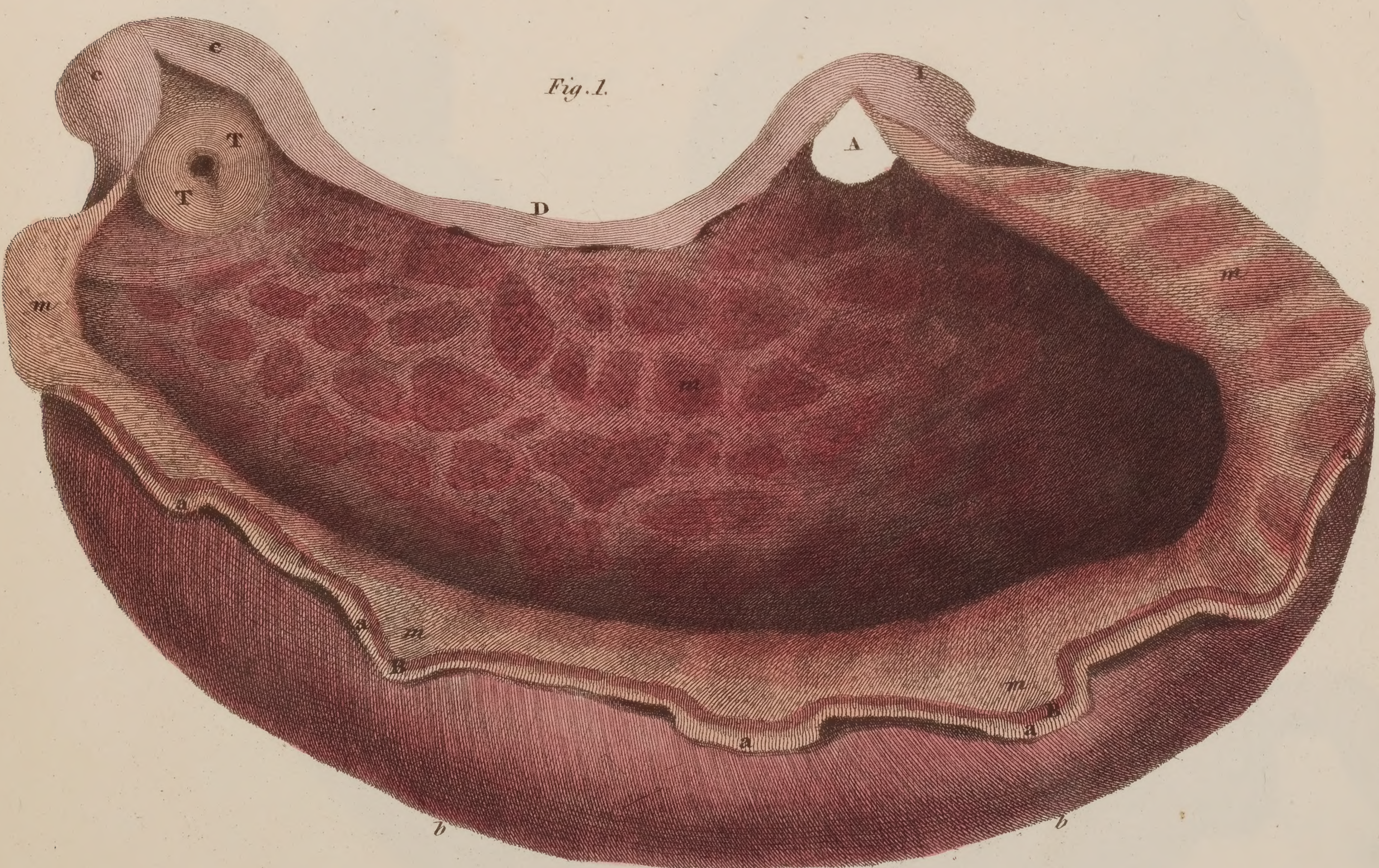
c
c
I
T
T
A
D
m
m
m
a
m
B
m
a
a
B
b
b

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PLATE XVIII.

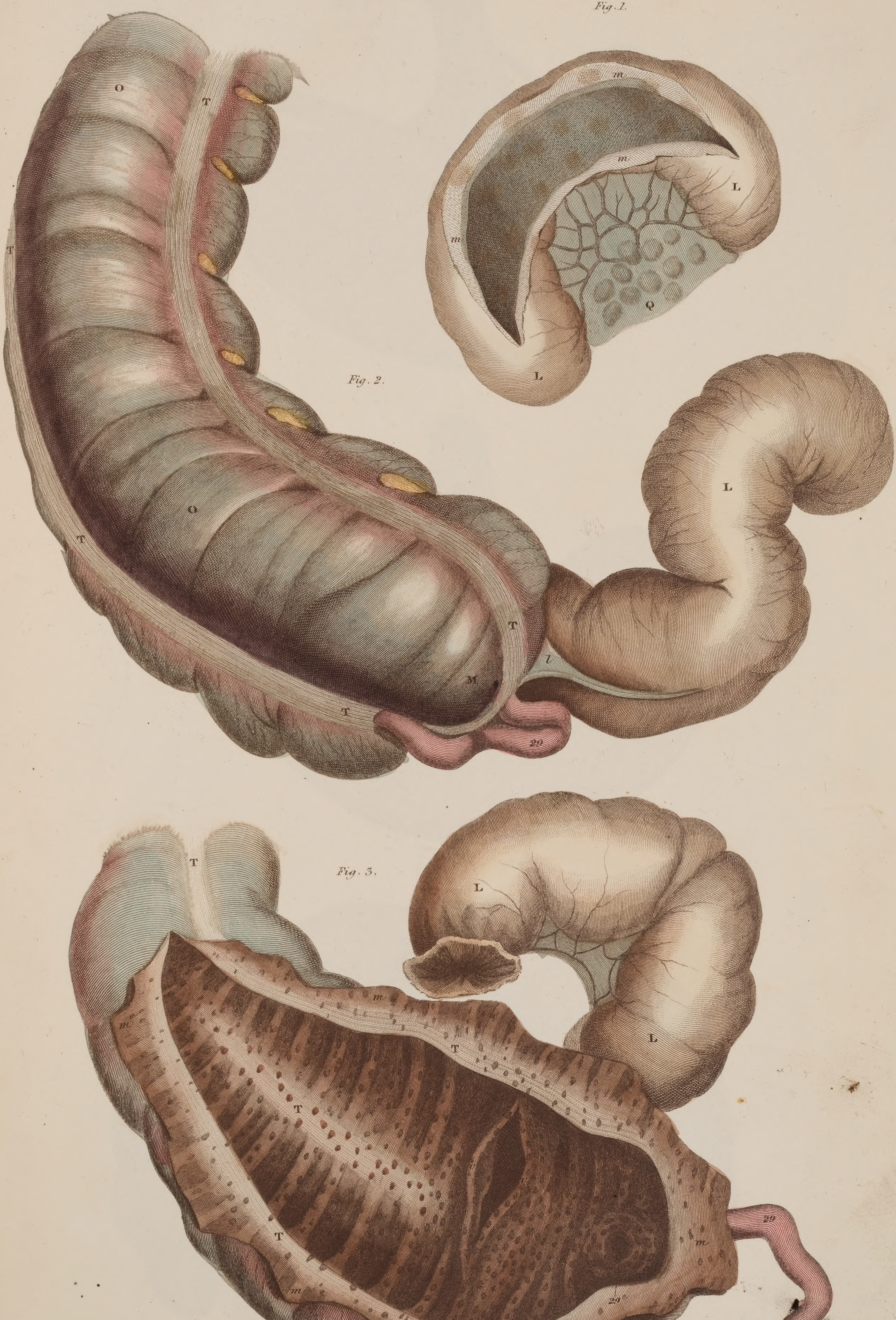
Fig. 1.
m
m
L
m
Q
L
Fig. 2.
O
T
T
T
T
O
T
T
M
l
29
L
Fig. 3.
T
T
L
m
m
T
T
L
T
29
m
m
29
T

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PLATE XIX.

Fig. 2.

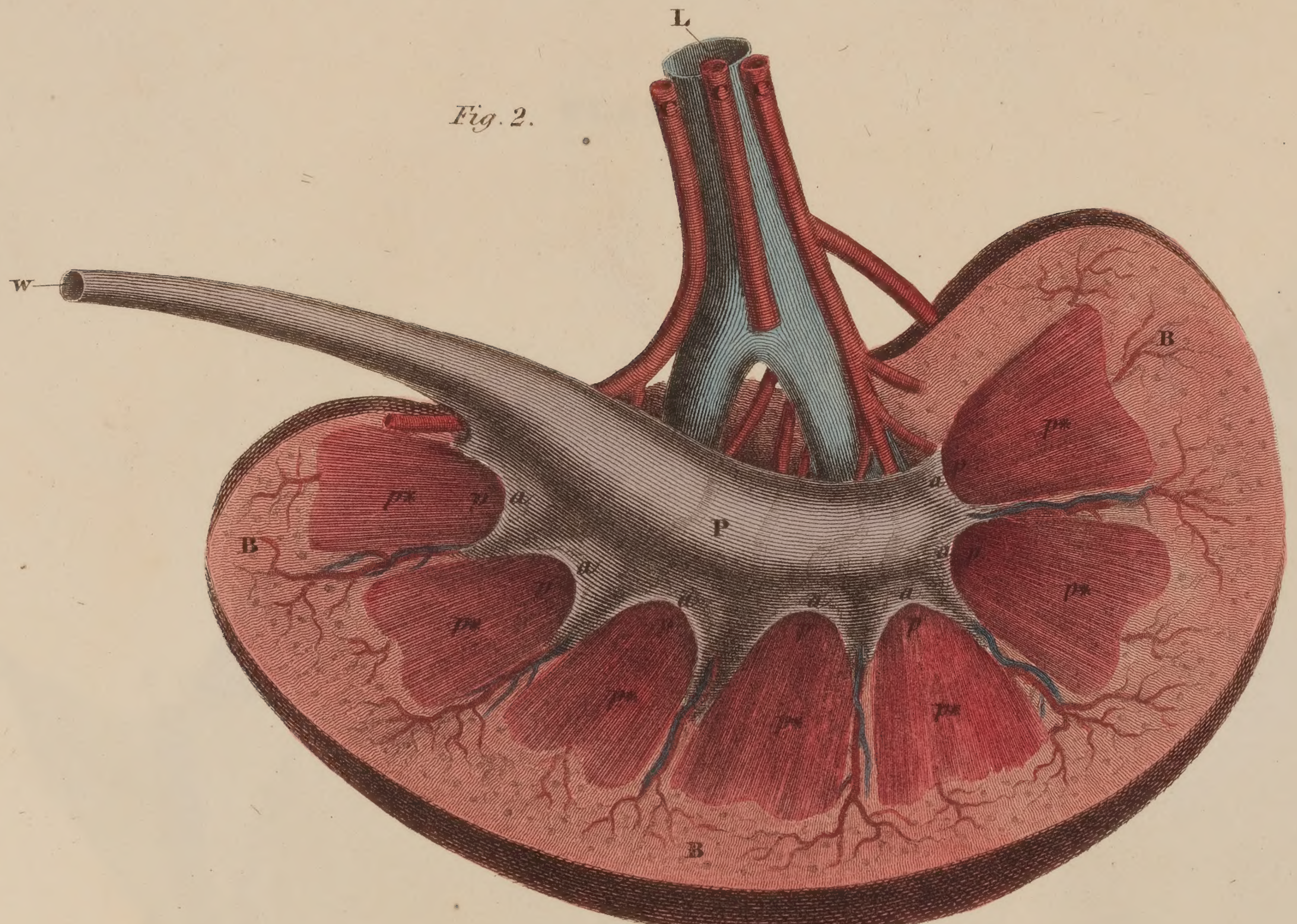
L
C
C
C
W
B
p*
a
P
a
B
B

Fig. 3.

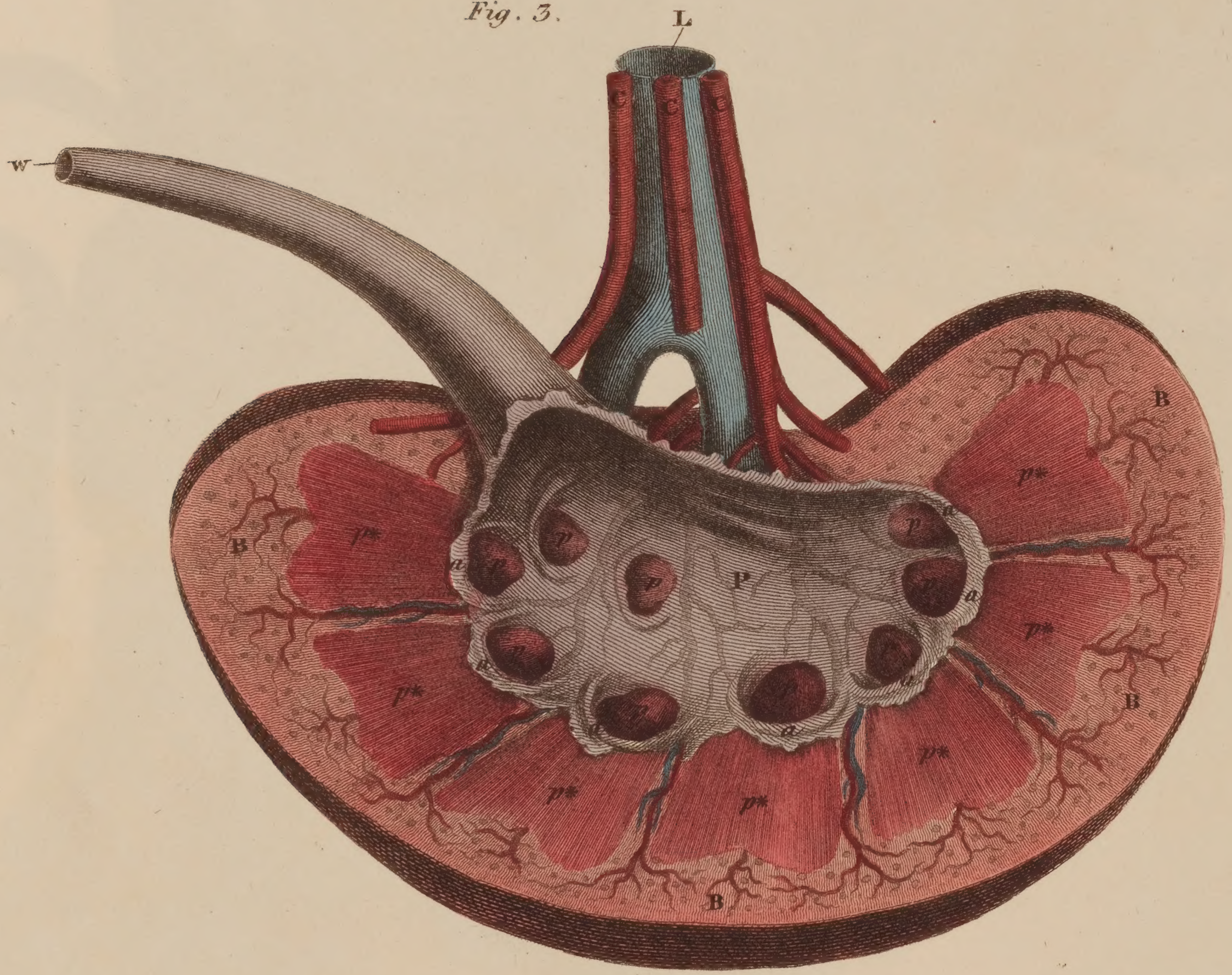
L
C
C
C
W
B
p*
P
a
B
B
B

Fig. 1.

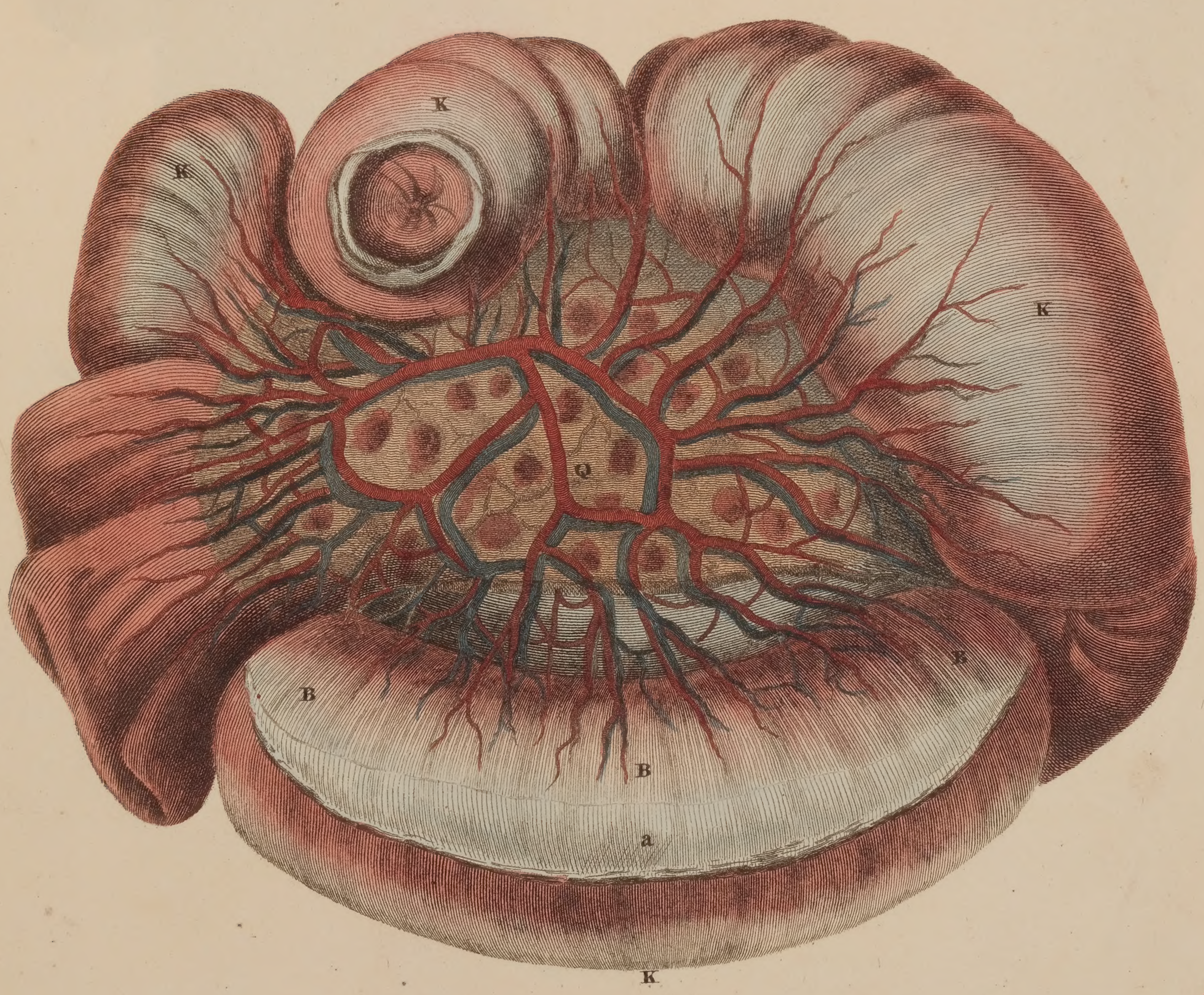

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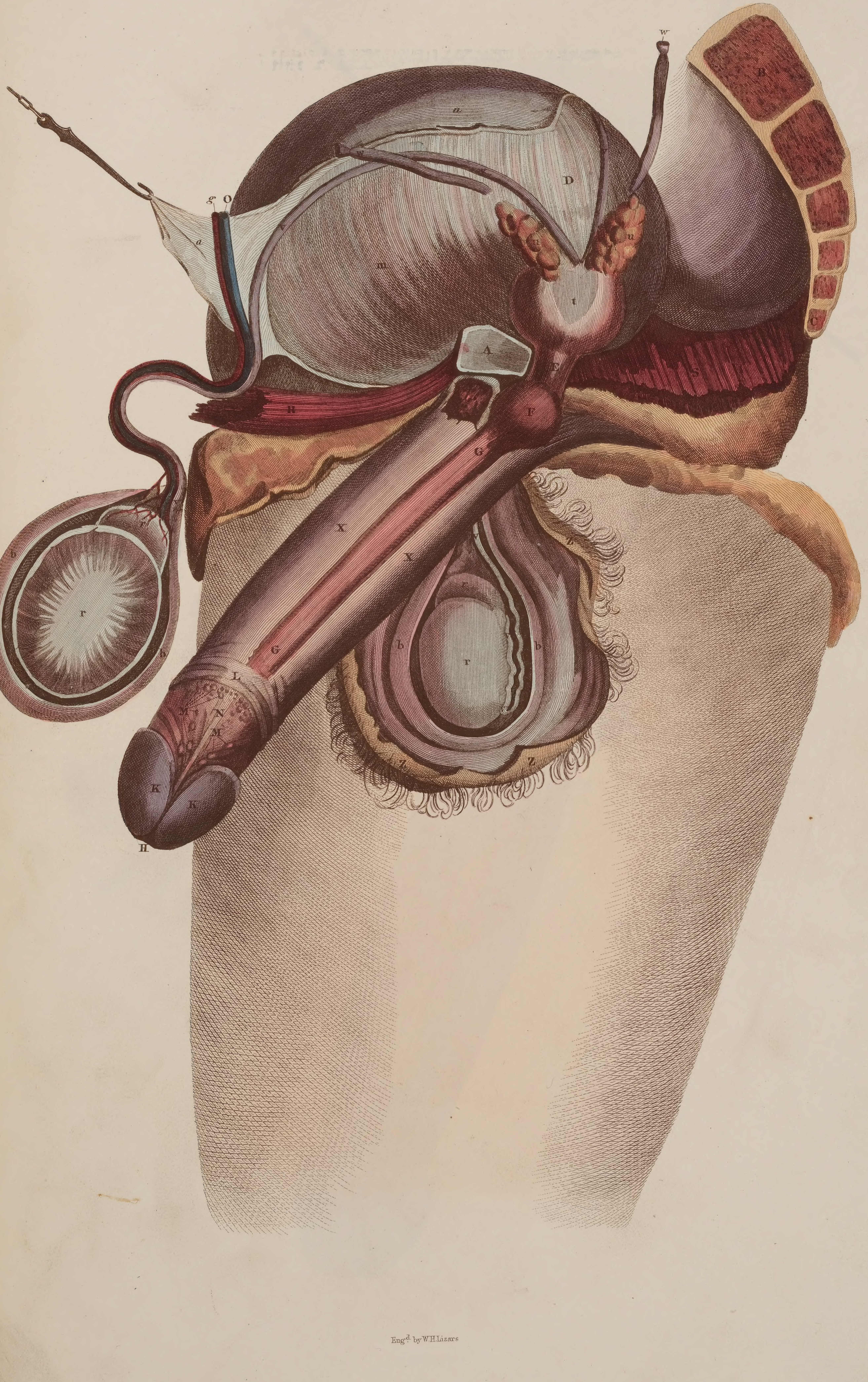
PLATE I.


w
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D
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v
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F
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b
r
b
X
X
b
b
r
v
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G
L
M
N
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K
K
z
Z
H

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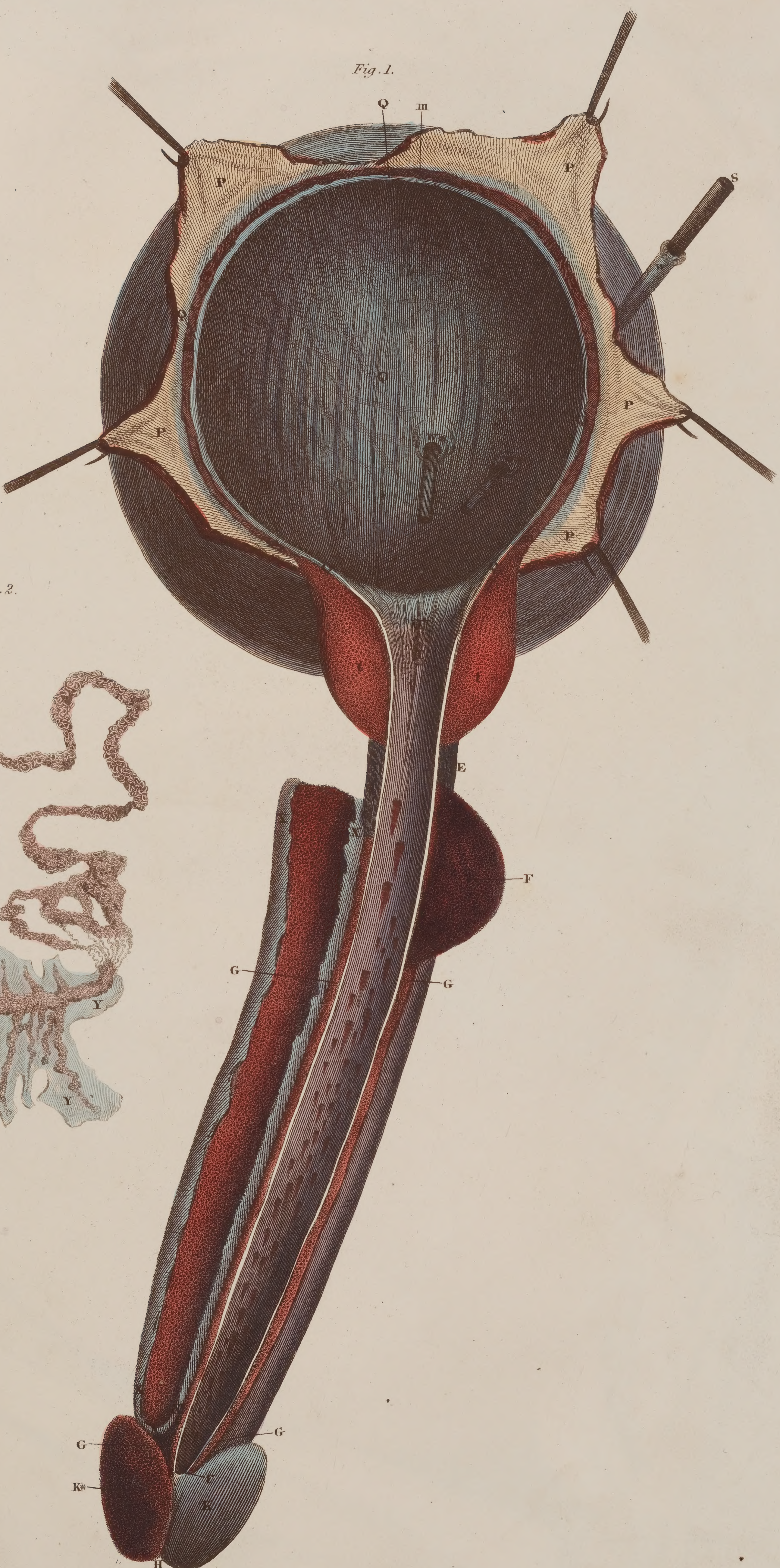
Fig. 1.


Q
m
P
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S
P
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G
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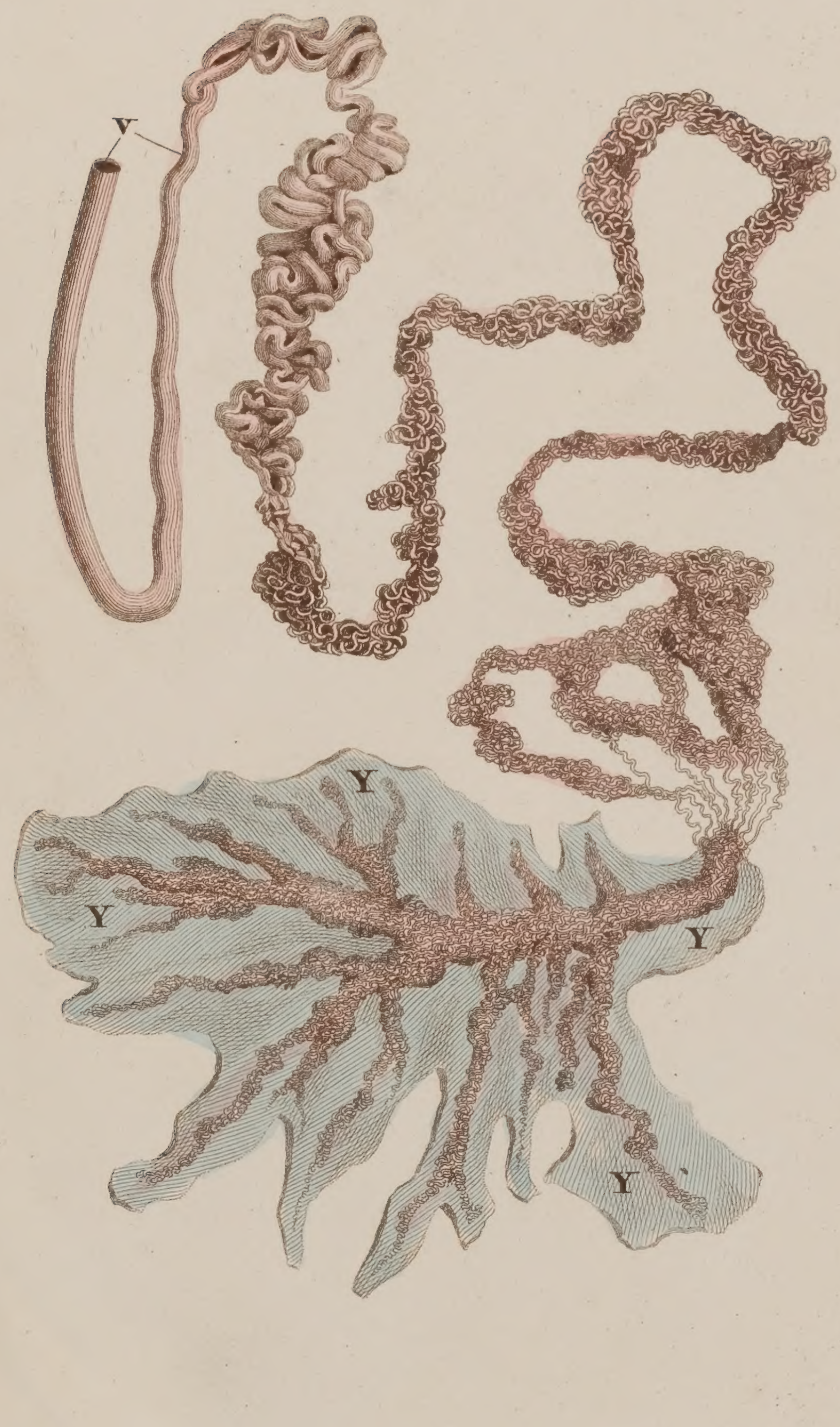
K
H
X

Fig. 2.



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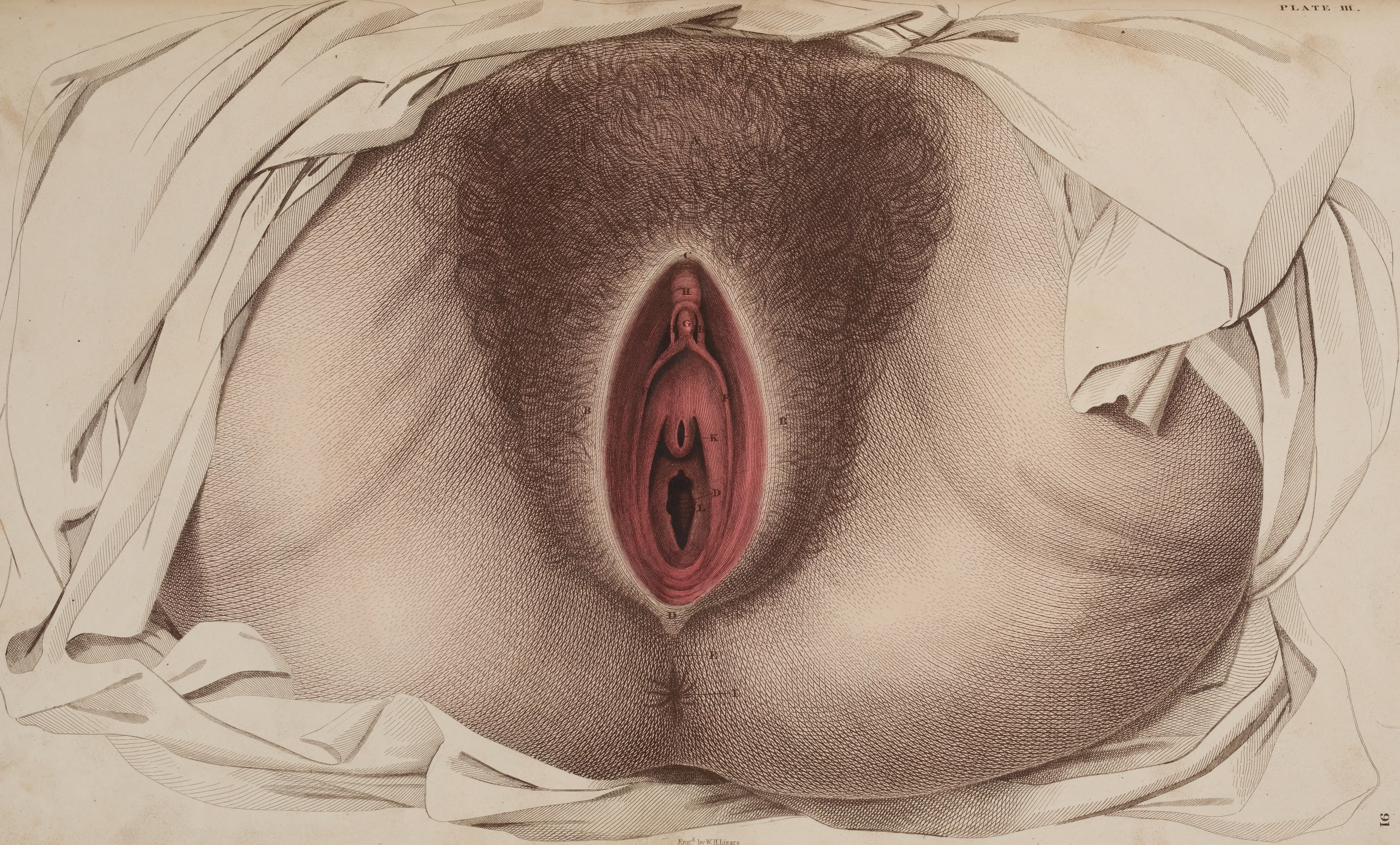
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B
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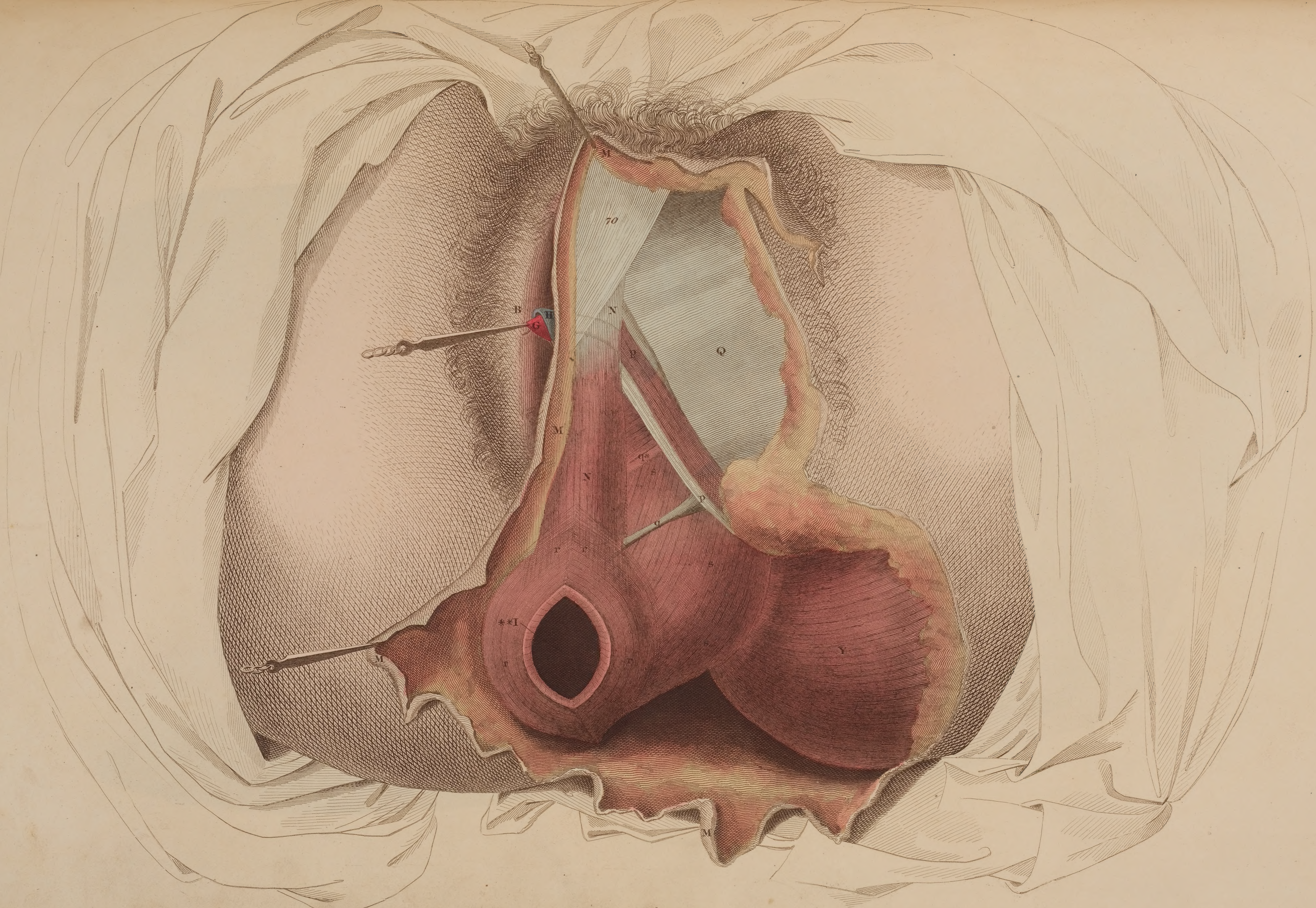
K
D
L
D
E
I

Engd by W. H. Lizars


M
70
B
H
G
N
P
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M
q*
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s
p
q
r
r
s
**I
r
r
Y
M
M

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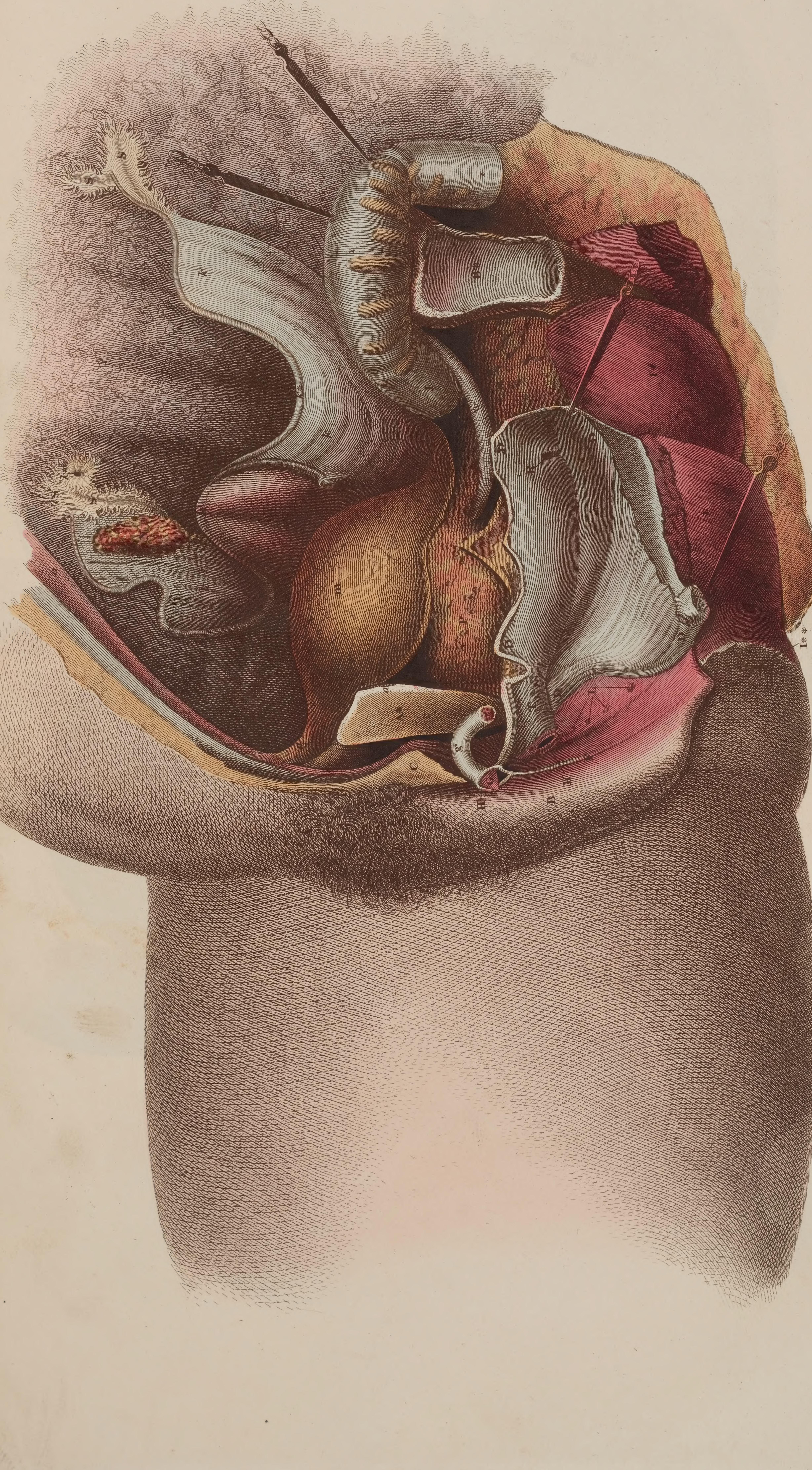
S
S
S
S
k
k
x
x
B**
I*
I
D
D
D
D
R
I
m
P
A*
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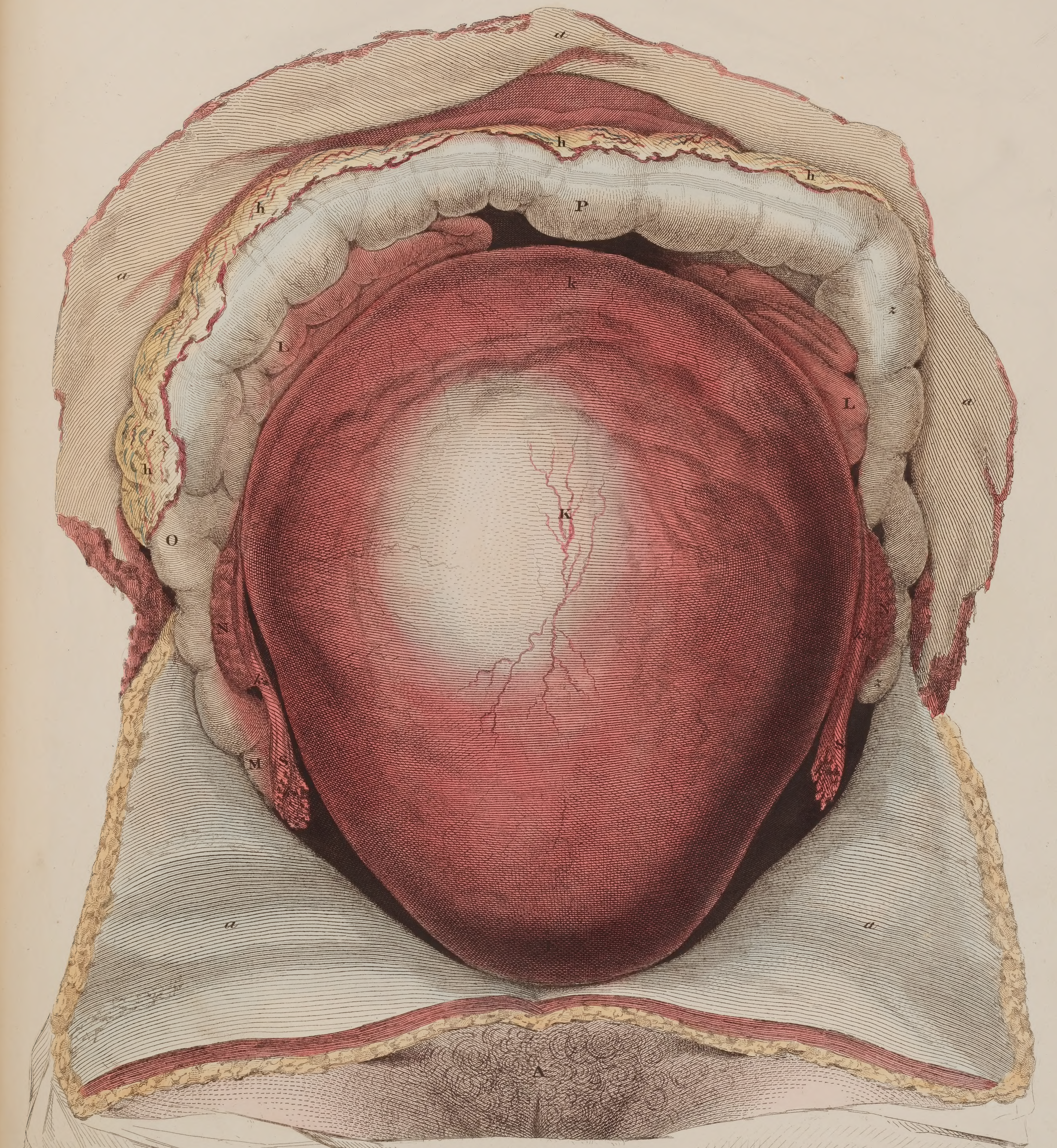
PLATE V.

Eng^d by W.H.Lizars

PLATE VII.


a
h
h
h
P
a
k
z
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a
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K
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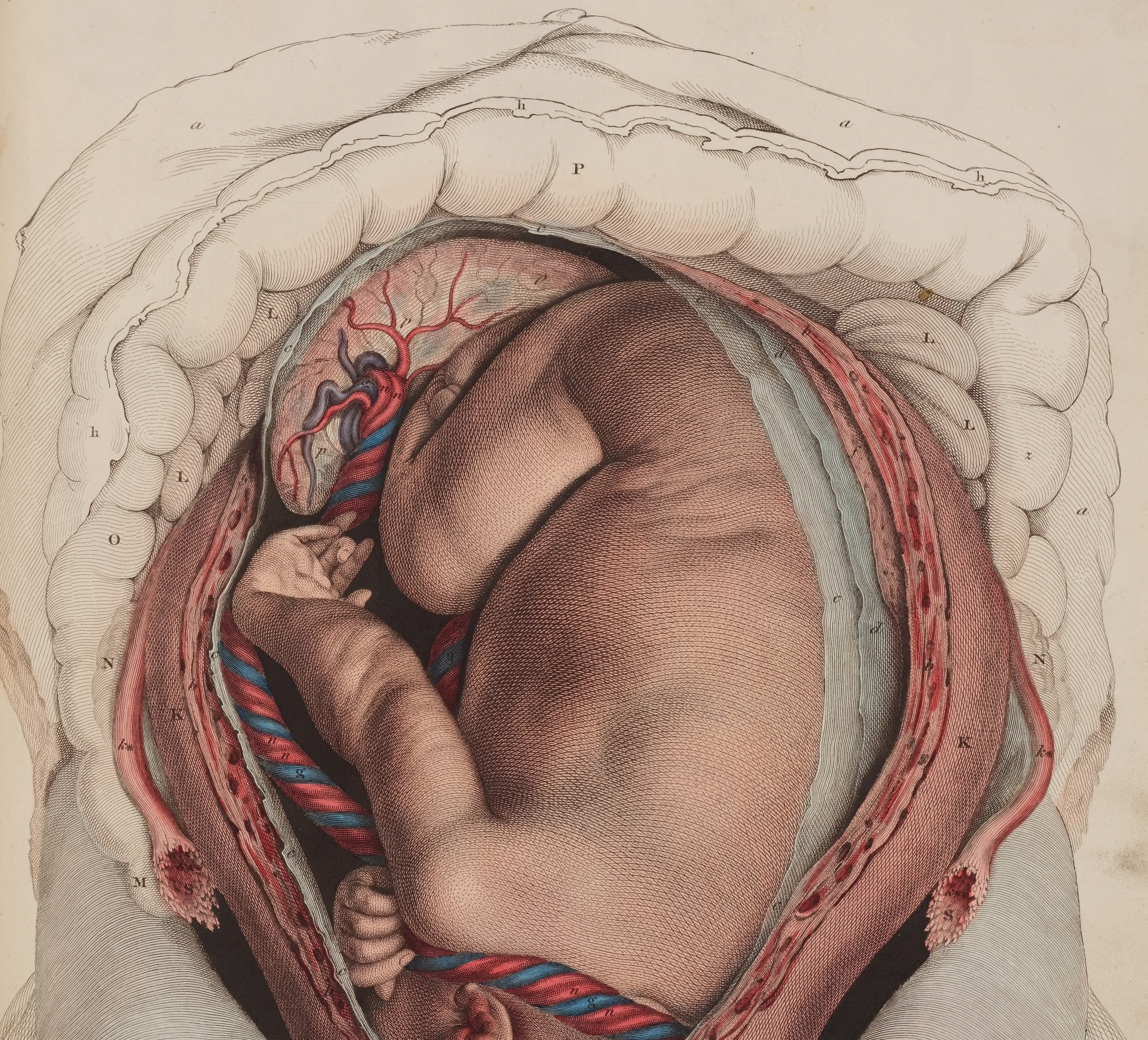
S
a
a
A

Engd by W.H. Lizars.

PLATE VIII.


a
h
a
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h
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L
L
z
a
h
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K
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a
a
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Engd by W.H. Lizars.

PLATE IX.

Fig. 2.

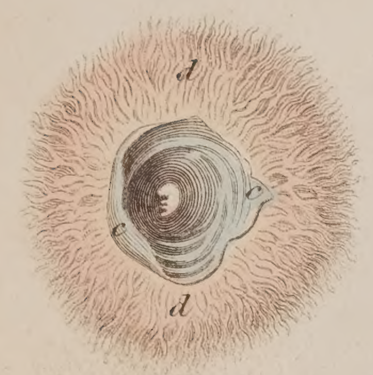
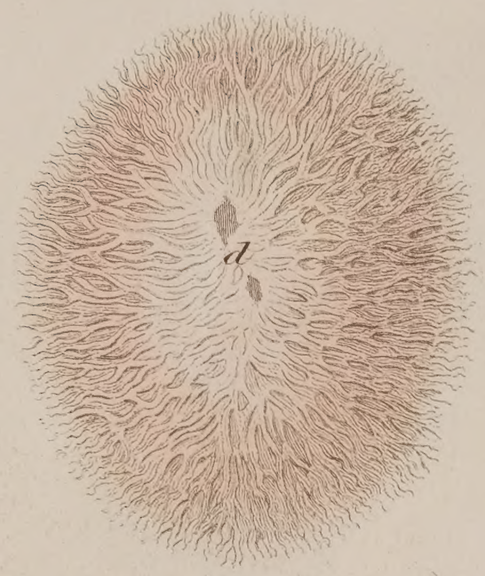


Fig. 3.



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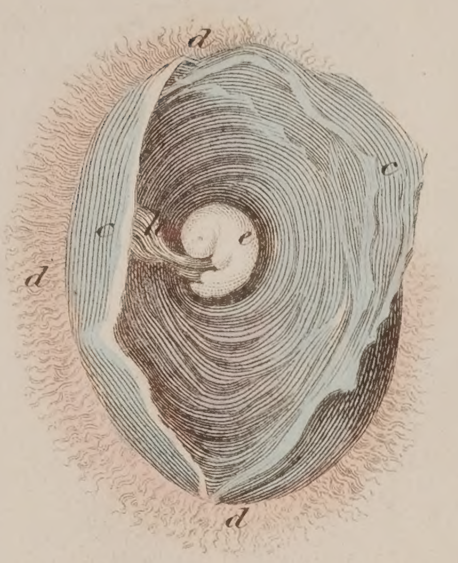

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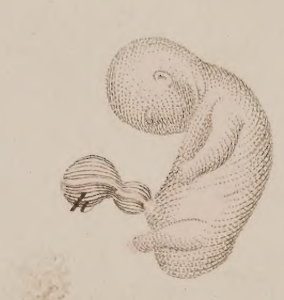

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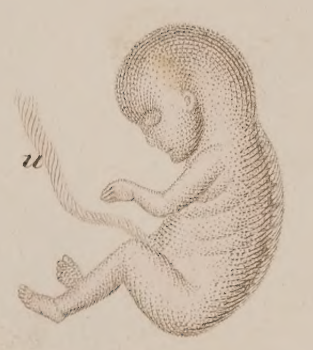

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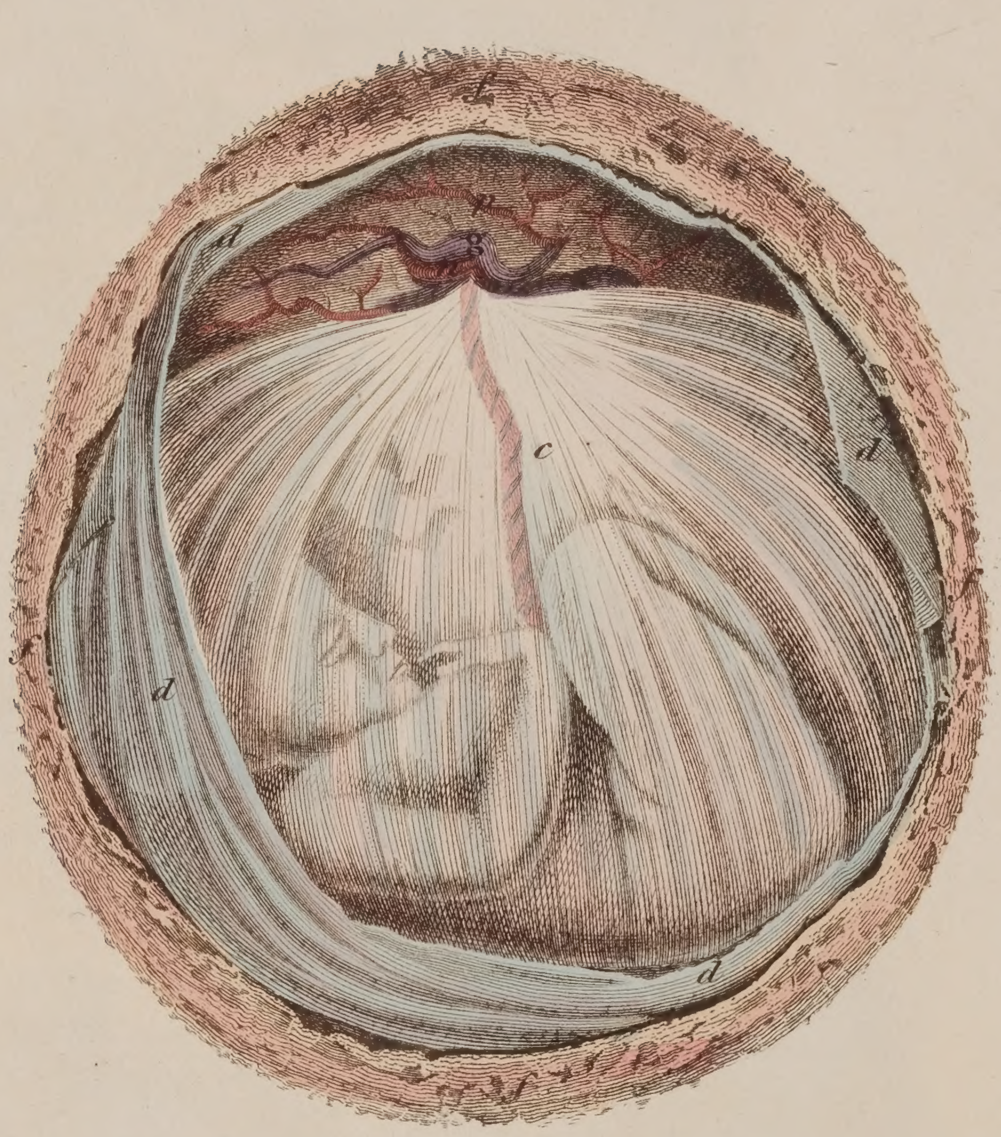
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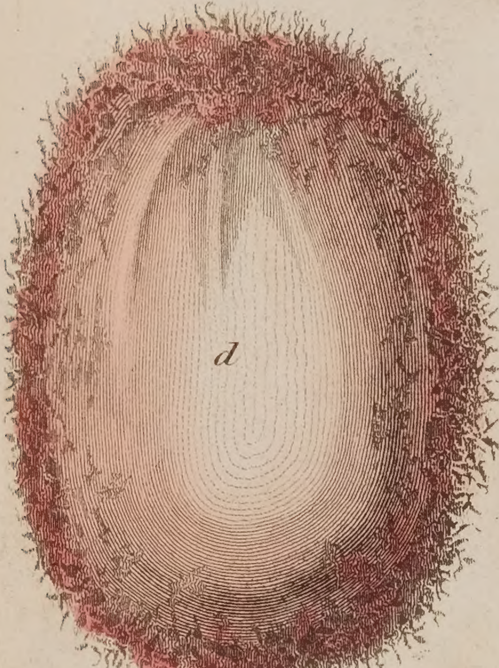
Fig. 7.



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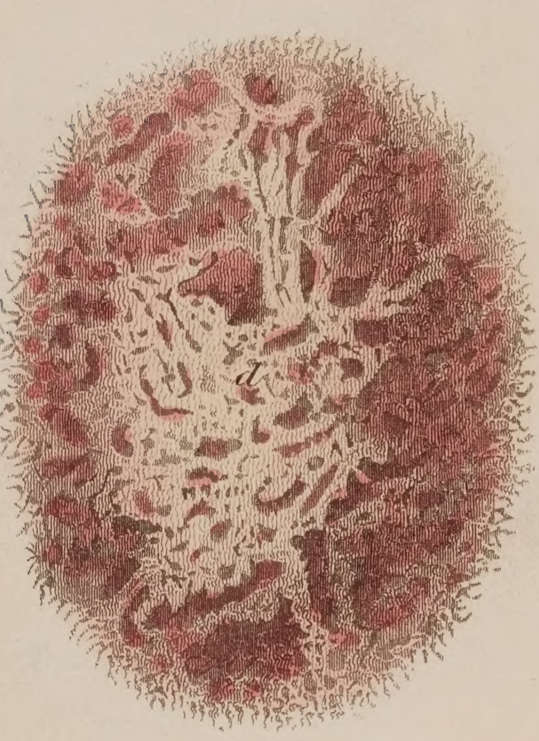
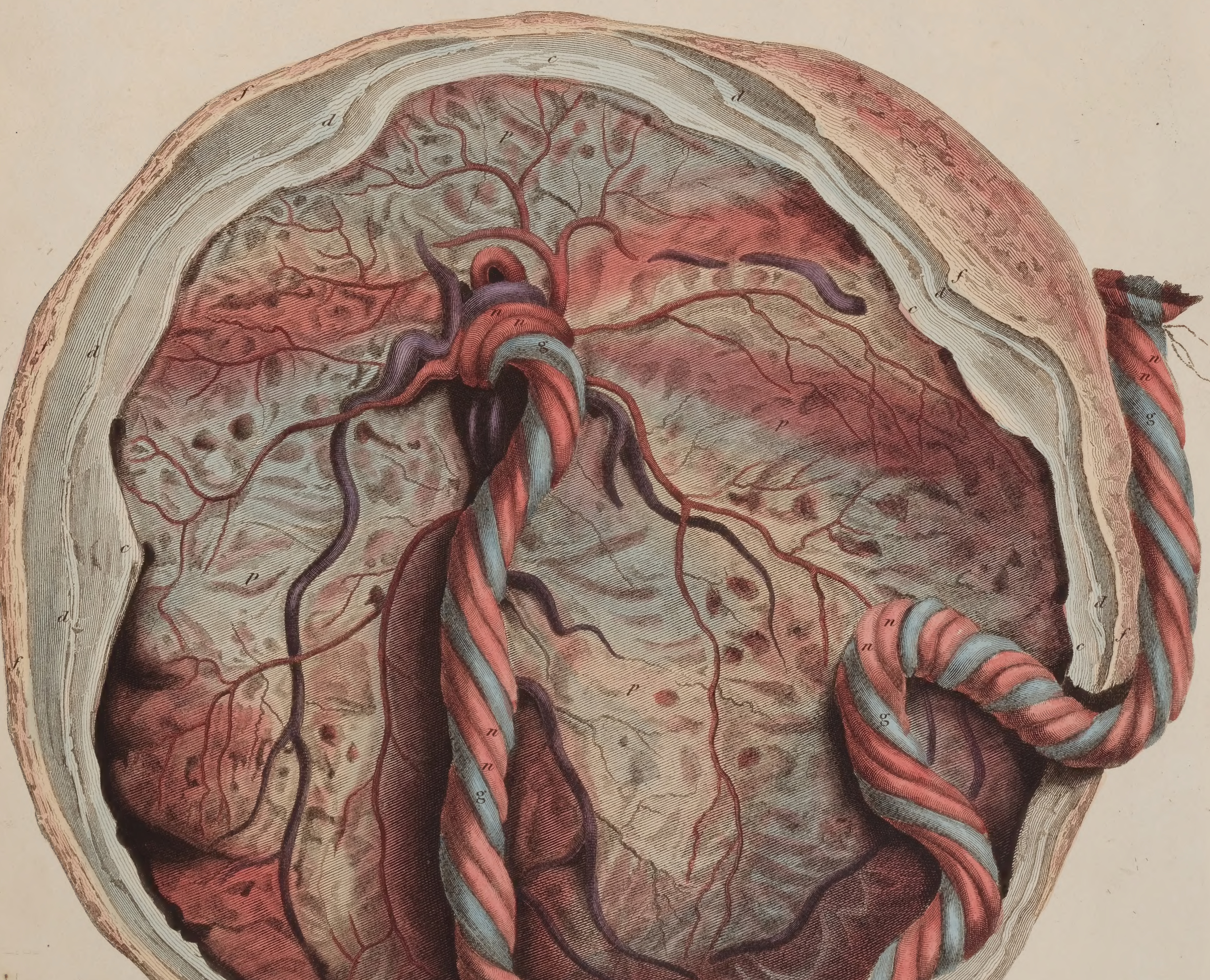


Fig. 1.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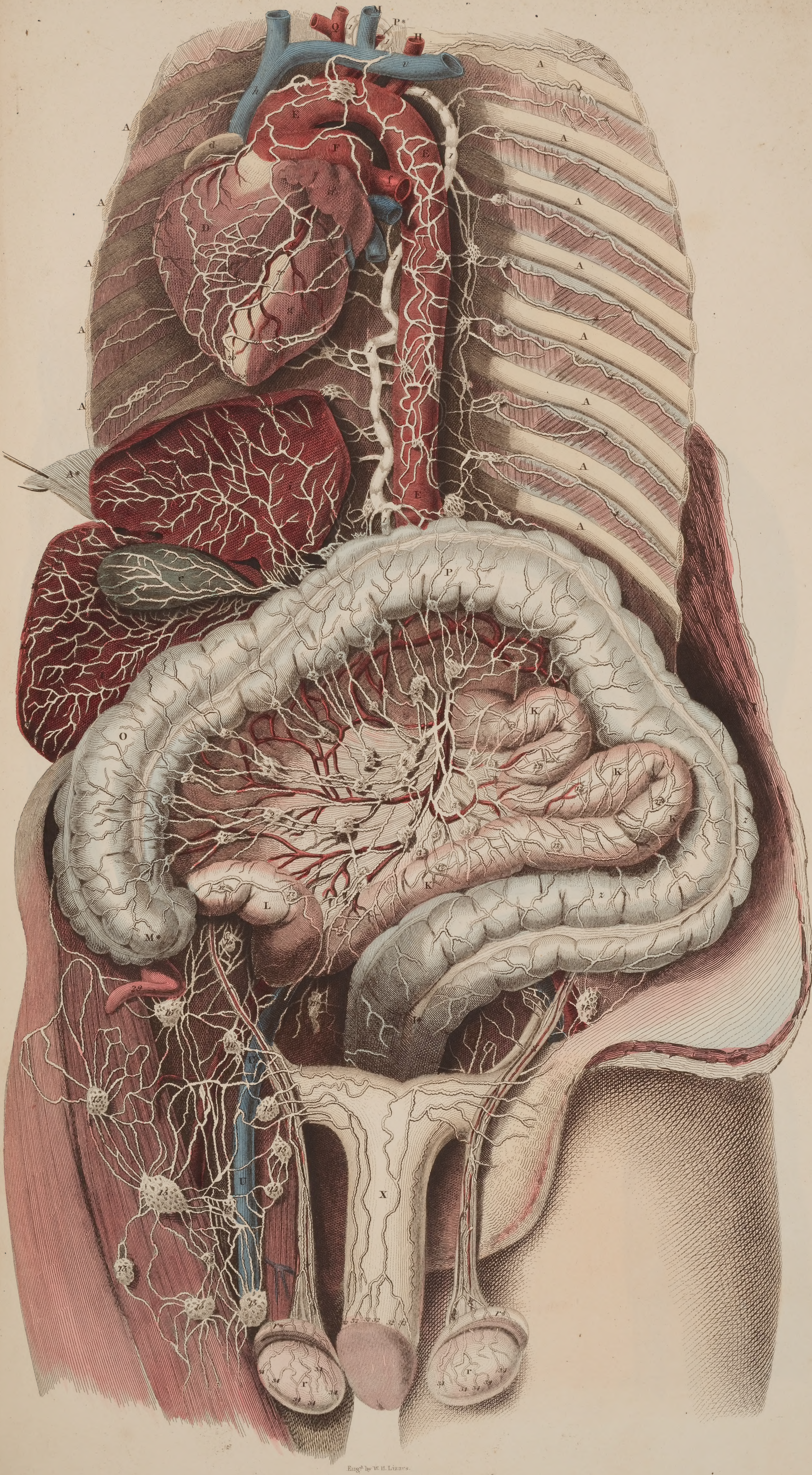
Engd by W.H. Lizars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Engd. by W. H. Lizars.

Fig. 1.

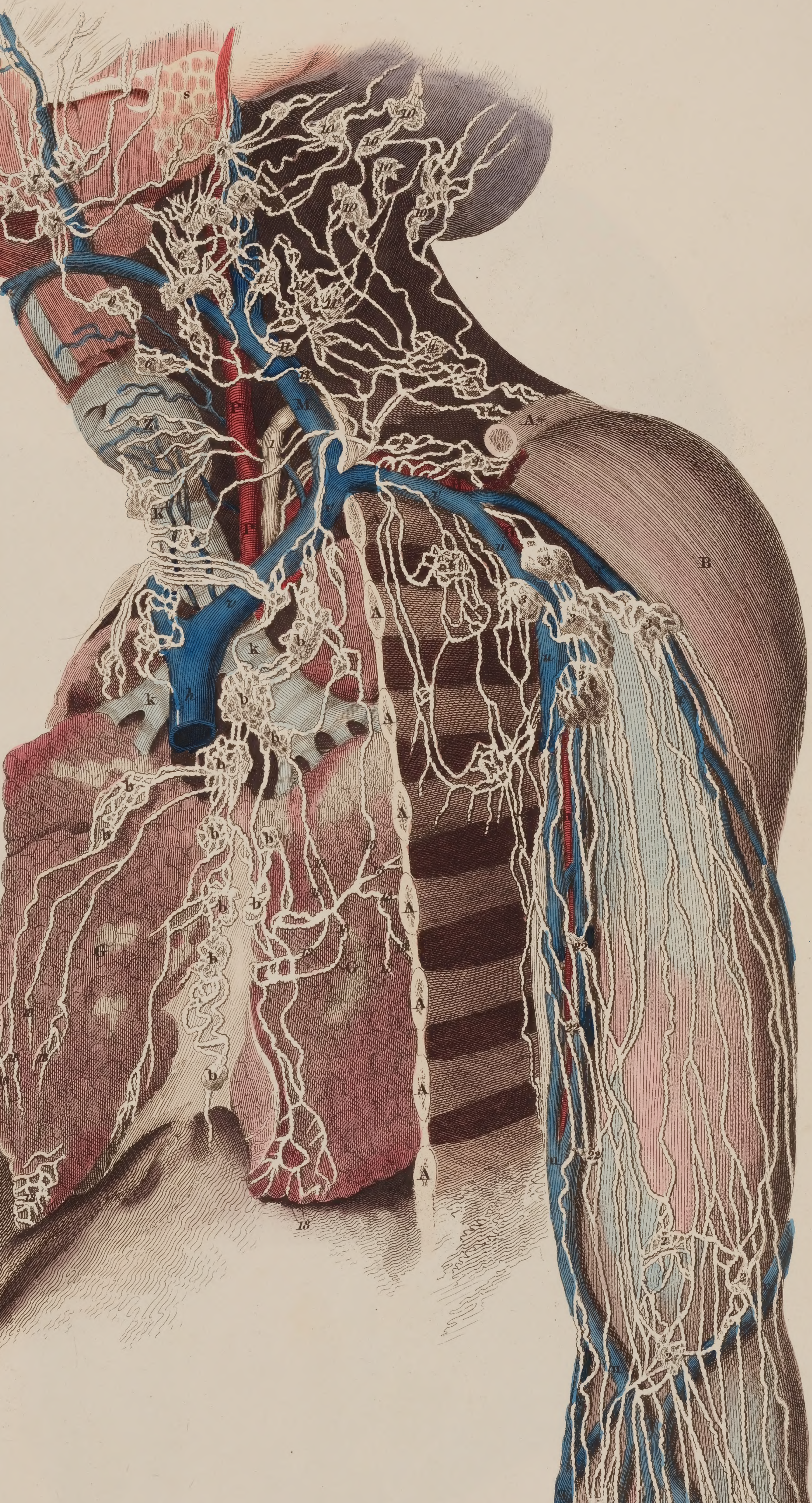
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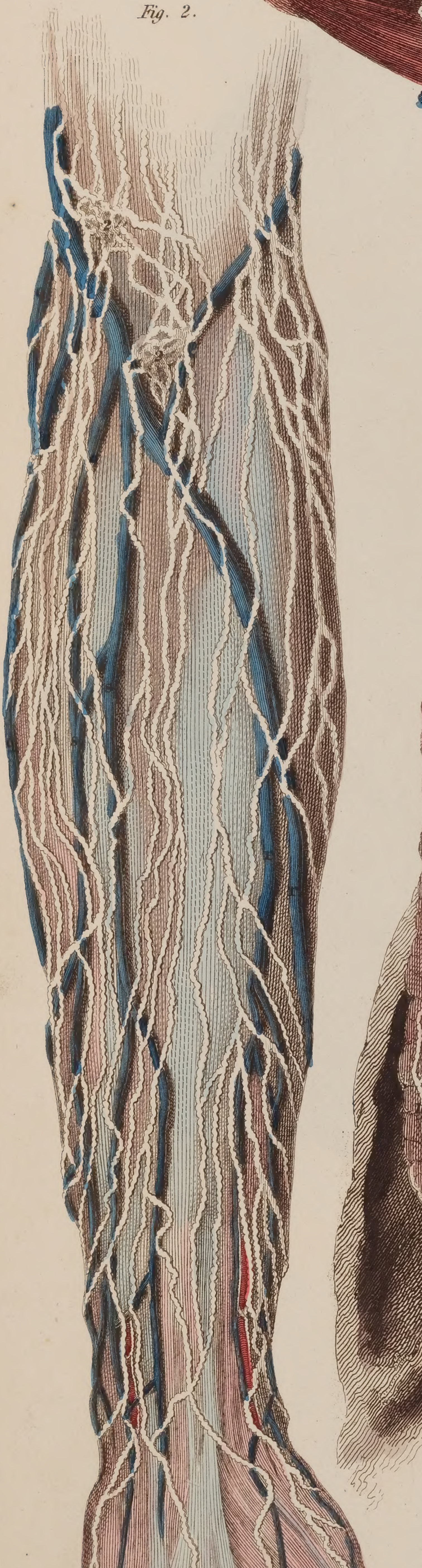
Fig. 2.



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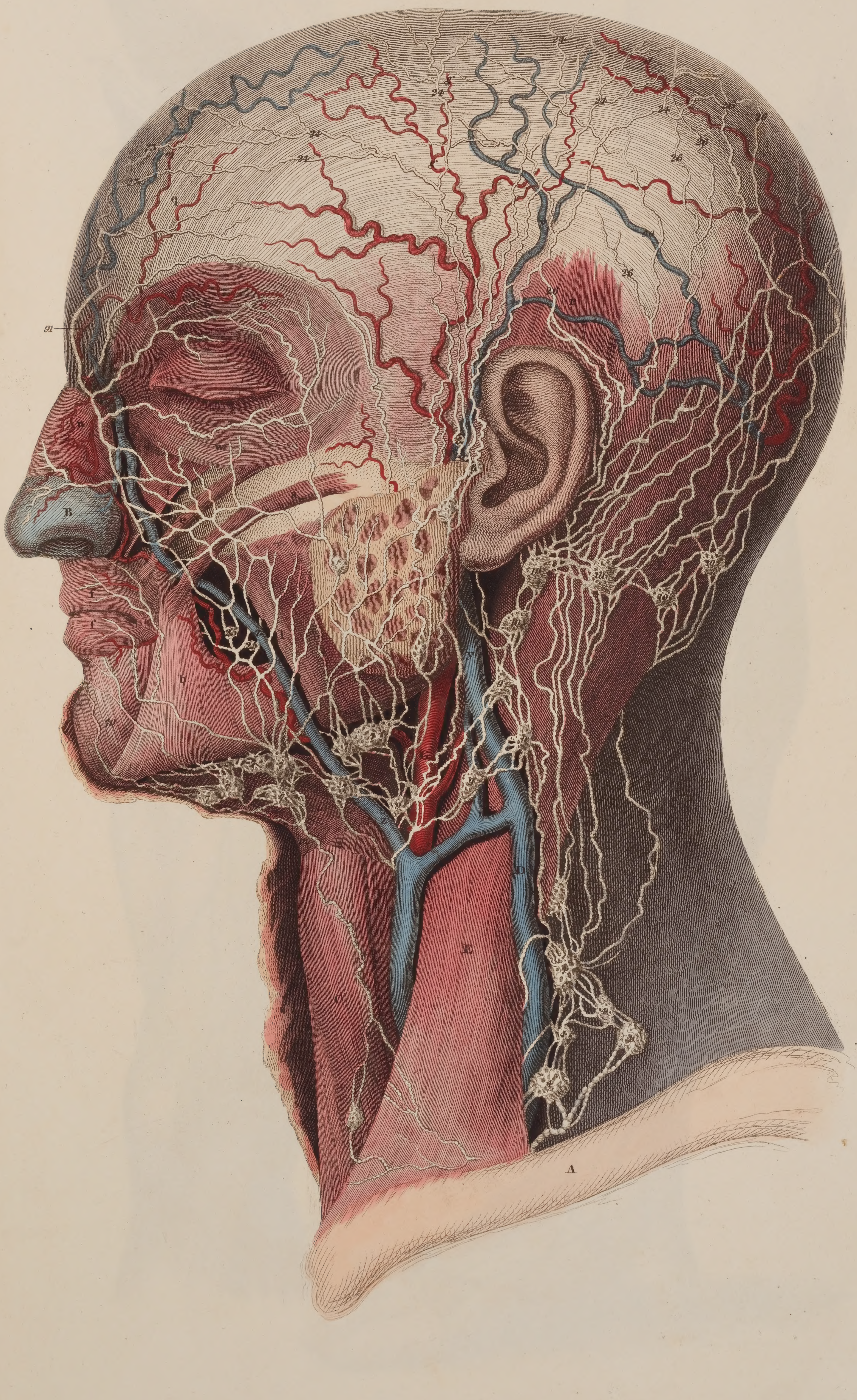
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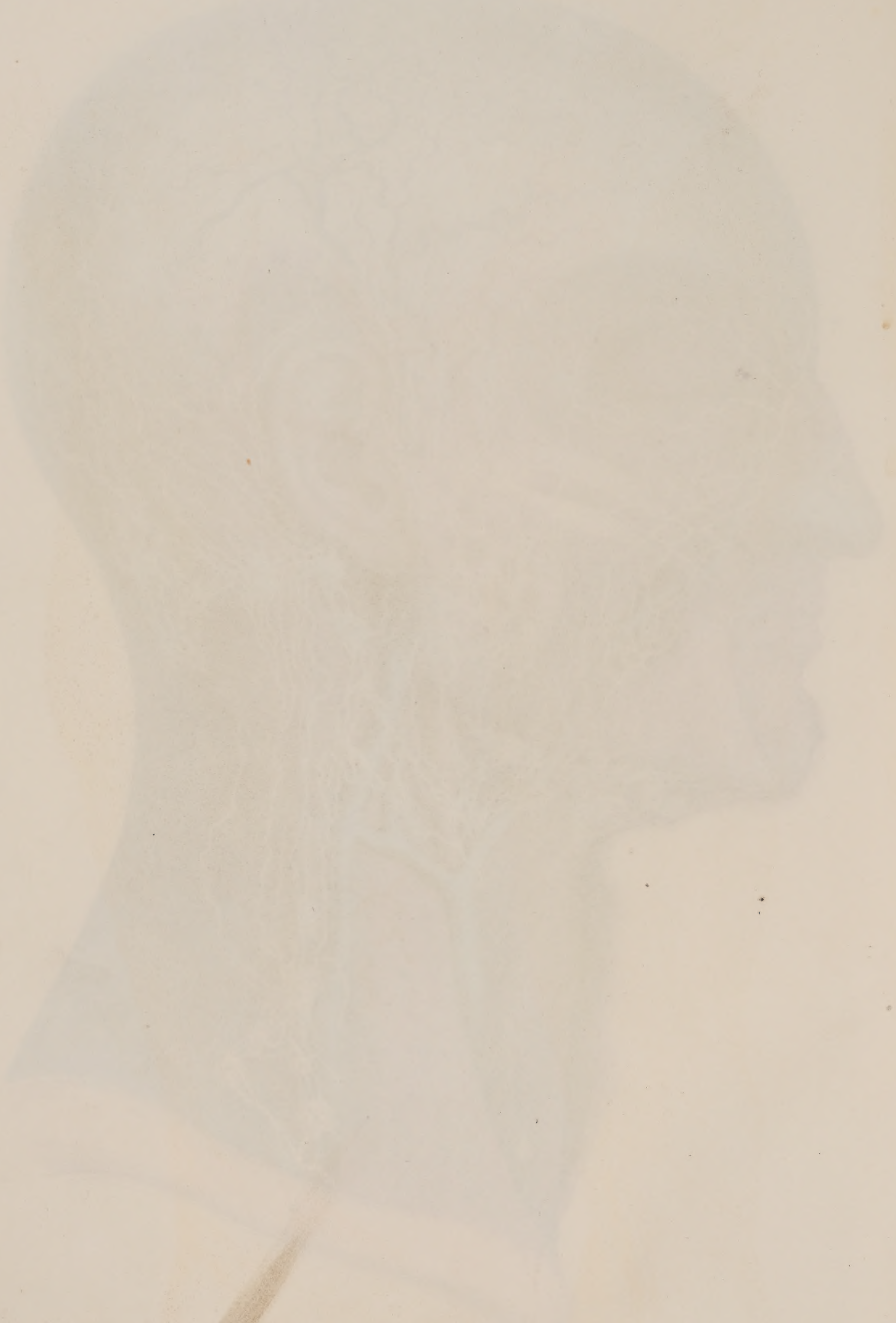

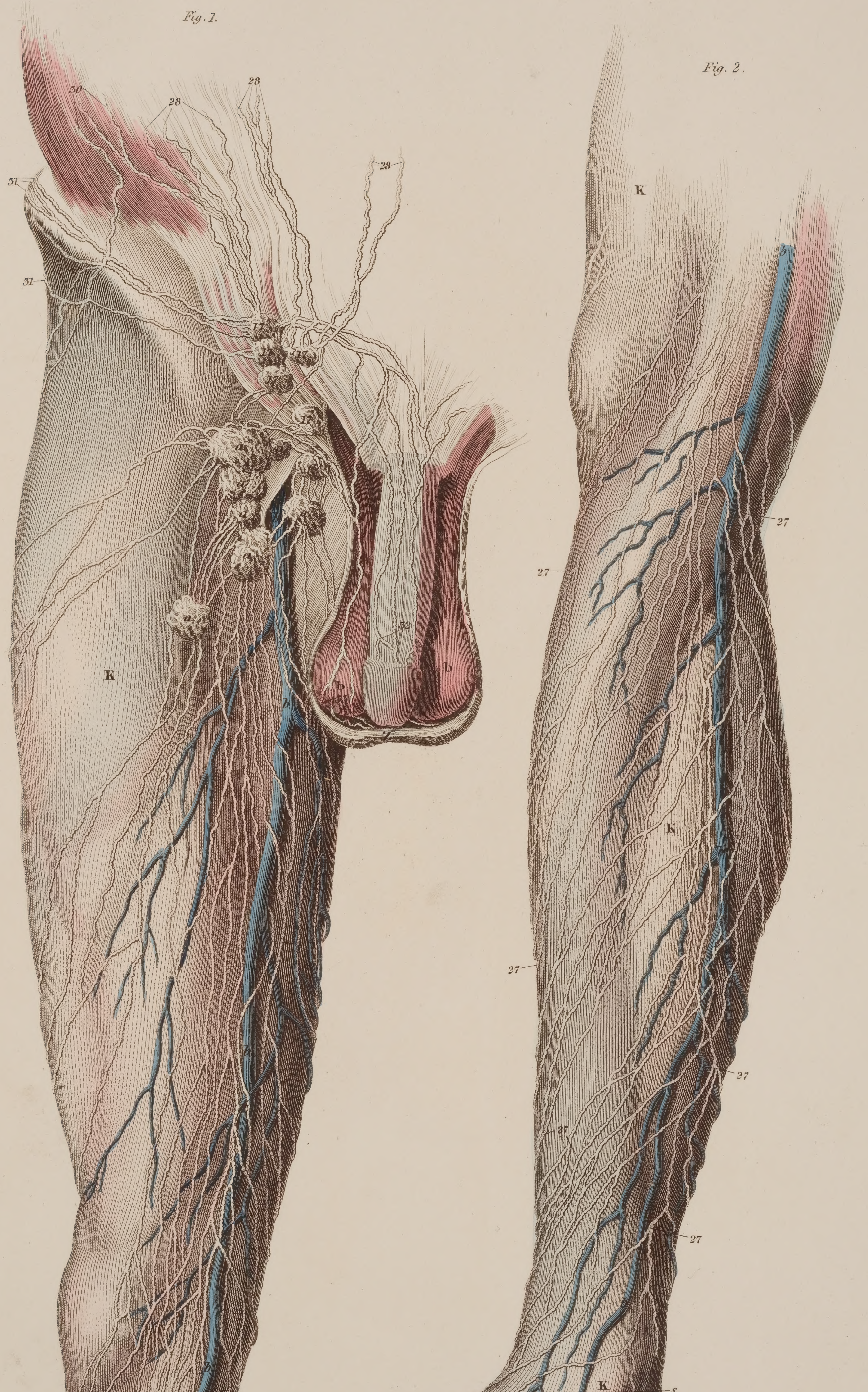
Fig. 1.
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